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Hunterian Lectures

ON

THE PATHOLOGY AND SURGERY OF CERTAIN DISEASES OF THE PANCREAS.

Delivered before the Royal College of Surgeons of England on March 7th, 9th, and 11th, 1904,

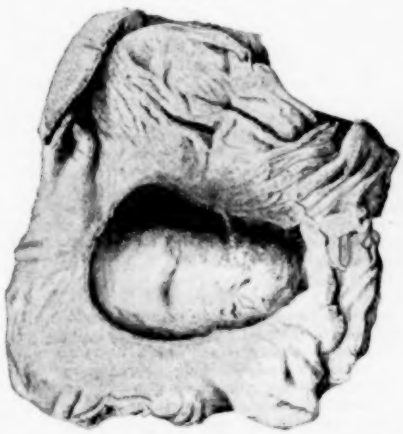
BY A. W. MAYO ROBSON, F.R.C.S. ENG.,
HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

LECTURE I.

Delivered on March 7th.

[MR. MAYO ROBSON commenced by referring to the comparative neglect which until quite recently was evidenced regarding the pancreas, its physiology and pathology. He then passed on to consider the anatomical relations of the gland and their variations as influencing the etiology of its diseases or of the tissues with which it lies in relation. He quoted a case described by J. Symington[1] in which the duodenum was completely surrounded and constricted by a ring of pancreas. Reference was also made to the invasion of the duodenum by new growths of the pancreas or the converse. The pancreas may also be invaded by new growth or ulcer of the stomach, as seen in the illustration (Fig. 1).

FIG. 1.



Chronic ulcer of the posterior wall of the stomach invading the pancreas. (Fenwick, London Hospital Museum.)

Mr. Robson then gave an account of three cases under his own care in which chronic gastric ulcer associated with pancreatitis and abscess was cured by the performance of gastro-enterostomy. In one case the ulcer was excised. The lecturer then passed on to consider the anatomical relations of the pancreas and related the operative measures by which the gland may be exposed as to the peritoneum. He then proceeded:]

The ducts of the pancreas and their variations have important bearings on its pathology as have also the anatomical variations of the common bile-duct. The chief excretory duct of the pancreas or duct of Wirsung, after passing along the whole length of the pancreas, ends by joining the common bile-duct in a small cavity called the ampulla of Vater, situated within the walls of the second part of the duodenum, and the two ducts discharge their secretion together into the duodenum through the biliary papilla. Besides this chief channel, the pancreas has an accessory duct, the duct of Santorini, which opens through the papilla minor into the duodenum two or three centimetres above the papilla major. These ducts present great varieties in their relations and in their course, and as we shall see when we come to consider the subject of inflammation, the anatomical variations are probably responsible for pancreatitis appearing in some cases of cholelithiasis and not in others. First let us take the common bile duct, which may conveniently be divided into four portions—*a*, *b*, *c*, *d*. The first two for our present purpose are unimportant, but the varieties of the pancreatic and the intraparietal portions are all important in the relations of jaundice to pancreatitis. The common bile duct descends alongside the head of the pancreas and comes in contact with the duct of Wirsung, besides which it lies for a short distance before entering the intestinal wall. According to Helly it is completely embraced by the head of the pancreas in 62 per cent. and lies in a deep groove in the gland in the remaining cases. It will be readily seen that if from any cause the head of the pancreas becomes swollen, say from an inflammation set up by the passage of a gall-stone or from a catarrh creeping up Wirsung's duct from the duodenum, the common bile-duct in the former variety will certainly be compressed and jaundice will follow, though in the latter variety where it only lies in a groove in the gland this compression may not take place and the patient may then escape jaundice.

Compression of the common bile-duct by the pancreas I believe accounts for many cases of so-called catarrhal jaundice, both of the acute and chronic variety. If under appropriate treatment the congestion or inflammation subsides the jaundice will rapidly pass off, but if the inflammation continues and chronic interstitial pancreatitis supervenes the jaundice will persist and with it a serious train of symptoms, which I hope to consider in my next lecture. But this relation may act in another way, which can be seen exemplified in one of the specimens on the table and which we can reasonably infer must always occur in certain circumstances. When a gall-stone is passing down the common duct and succeeds in reaching the pancreatic portion of the duct it must, should the pancreas be embracing it, produce serious pressure on the gland which will lead to partial, if not complete, obstruction of the pancreatic ducts, and thus to stagnation of the secretion in the pancreas, which will probably soon become infected, either from the duodenum directly, through the already irritated duct of Santorini, or by continuity of mucous surfaces through the duct of Wirsung where it opens into the ampulla of Vater, for it is well known that in many, if not all, cases of common duct cholelithiasis the bile becomes infected and we may reasonably argue from one to the other. Thus this anatomical arrangement is probably responsible for many cases of pancreatitis of greater or less severity.

It may be argued, and, in fact, the argument is used in the text-books, that if one duct of the pancreas be obstructed the other will take up its work, but this is not so in 50 per cent. of cases, as shown by diagrams. These diagrams are the

FIG. 2.

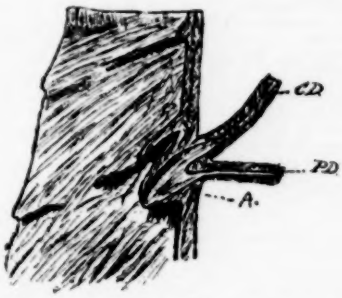


Diagram to show the ampulla of Vater (A), with the ordinary termination of the common bile-duct (CD) and the duct of Wirsung (PD). (Testut.)

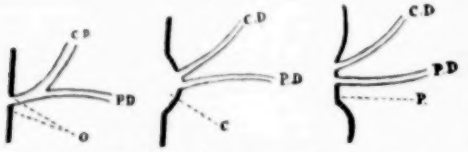
result of the examination of 100 cadavers by Opie who found that in more than half of all individuals the lesser duct is at its orifice obliterated or so contracted that it cannot assume the functions of the larger duct when that is obstructed. The following statistics show the

[1] Journal of Anatomy and Physiology, 1885, vol. xix., p. 292.

analysis. In 90 specimens the two ducts are united; in ten two wholly independent ducts enter the intestine. 1. Of the ducts in anastomosis. (1) Duct of Wirsung longer in 84: *(a)* duct of Santorini patent in 63; and *(b)* duct of Santorini not patent in 21. (2) Duct of Santorini longer in 6: *(a)* duct of Wirsung patent in 6; and *(b)* duct of Wirsung not patent, 0. 2. Ducts not in anastomosis in 10: *(a)* duct of Wirsung longer in 5; and *(b)* duct of Santorini longer in 5. In 89 per cent. the duct of Wirsung was larger than the duct of Santorini. In 21 per cent. the duct of Santorini was apparently obliterated near its termination. In six cases the duct of Santorini was larger than the duct of Wirsung. In all cases where the duct of Santorini is patent it diminishes in size towards the duodenum. Thus the duct of Santorini cannot be relied on in many cases to supplement the duct of Wirsung, if it be obstructed; moreover, the duct of Wirsung, even if patent and communicating with the duodenum, may itself be compressed by a moderate sized gall-stone passing down the pancreatic portion of the common duct.

The normal termination of the common bile-duct and of Wirsung's duct is into the ampulla of Vater (Fig. 2), which is a conical shell-shaped cavity into the base of which the ducts enter and which Testut describes as from six to seven millimetres in length, but this varies considerably in different individuals from 0 to 11 millimetres, the average according to Opie, in 100 bodies examined, being 3·9 millimetres. In only 30 did the diverticulum exceed 5 millimetres The orifice of the ampulla at the papilla is only 2·5 millimetres in diameter, it being thus narrower than any other part of the common bile-duct. In a proportion of cases the ampulla of Vater is absent, when the terminations of the common and pancreatic ducts are liable to great variations. There may be said to be four types as shown in the diagrams. First, the characteristic type which is described as the ampulla. In the second type the pancreatic duct joins the common duct some little distance from the duodenum, the ampulla is absent, and the duct opens into the duodenum by a small, flat, oval surface. In the third type the two ducts open into a smaller fossa in the wall of the duodenum, while the caruncle and the ampulla of Vater are both absent. In the fourth type the caruncle is well developed, the ampulla of Vater being absent, its two ducts opening side by side at the apex of the caruncle (Fig. 3). Among Opie's 100 cases

FIG. 3.



Three other methods by which the common bile-duct and Wirsung's duct enter the duodenum. CD, Common bile-duct. PD, Pancreatic duct. O, Common orifice. C, Cup-shaped depression in the wall of the duodenum. P, Papilla.

there were 11 examples of this last type. If the diverticulum be large it is possible for a small stone to occlude the orifice and yet to leave the two channels entering the diverticulum patent, when bile passing down the common duct may be forced into the duct of Wirsung and bring on acute hæmorrhagic pancreatitis (Fig. 4). The diagram which I show illustrates the condition. I shall have more to say on this matter in another lecture when speaking of acute hæmorrhagic pancreatitis.

Accessory pancreatic nodules may be found by the side of, or within the duct of, Santorini or in the walls of the stomach, duodenum, jejunum, or ileum and in all such cases a small independent duct empties into the contiguous intestine An accessory pancreas has been found by J. H Wright close to the umbilicus, it being apparently connected with the persistent remains of the vitelline duct. These may be of importance in serious diseases of the pancreas itself, as the histological characters and presumably the physiological functions conform to those of the normal pancreas. Thus may possibly be explained some cases where there is an absence of glycosuria in atrophy or extensive disease of the true pancreas. These accessory glands tend to undergo chronic interstitial inflammation and other diseases like the true pancreas, the inflammatory process being probably due to infection from the intestine into which the ducts open directly. In some cases these ducts have been found dilated and tortuous and in other cases narrowed close to their intestinal outlet.

Among the cases of accessory pancreas that have been recorded their association with intestinal, especially duodenal, diverticula has been noted. This anomaly is readily explained by the small accessory pancreas being developed in the muscular wall of the gut and producing a weak spot

FIG. 4.

Diagram showing large diverticulum of Vater containing a calculus and illustrating one cause of hæmorrhagic pancreatitis. (Opie.)

through which the mucous membrane tends to bulge. Among the anomalies of the pancreas, the head or tail may be found separated from the rest of the gland, or a portion of the head may be detached and lie behind the mesenteric vessels, or the groove from the mesenteric artery may be converted into a channel. In a case on which I operated recently I found a prolongation from the head of the pancreas extending upwards in front of the common bile-duct and the hepatic duct and exerting pressure on both owing to its being inflamed and swollen. A case of congenital ectopia of the head of the pancreas associated with gastroptosis was reported by Cacchini in 1886 and a number of cases have been reported in which the pancreas formed part of the contents of diaphragmatic and umbilical herniæ. In one case the pancreas was contained in the sac of a congenital umbilical hernia. A case of moveable pancreas producing symptoms resembling those of moveable kidney was reported by Dobrzycki in 1878; it was caused by a fall from a height in a man aged 56 years. In one reported case the pancreas was invaginated into the intestinal canal and, strange to say, there has been one case recorded where the pancreas was apparently entirely wanting.

MINUTE ANATOMY.

The pancreas is a racemose or acino-tubular gland, the acini being formed of polygonal cells, the ducts connected with the alveoli being lined with flattened epithelium and the larger ducts with long columnar cells. It thus resembles the salivary glands in structure and it appears to have some obscure relation to these glands, as shown by metastasis from the one gland to the other in mumps. Lying in the interalveolar spaces are groups of small, irregular, polygonal cells known as the islands of Langerhans who described them in 1869 (Fig. 5). These cell masses have an important bearing on metabolism and, as we shall see shortly, on the glycogenic function of the pancreas, but as they are not connected with the ducts in the higher vertebrates they have apparently no relation with the proper secretion of the pancreas, though this is not finally settled. Like the salivary glands the pancreas has a firm texture, the lobes being large. The interacinar connective tissue is, however, of loose texture and readily allows of separation of the lobules, as shown in the beautiful specimen on the table from the Hunterian Museum. We shall see what an important bearing this tissue has when we come to consider interstitial pancreatitis.

Physiological considerations and their bearing on the pathology of the pancreas.—The ferments contained in the pancreatic juice, the proper secretion of the gland, are four: (1) trypsin, a proteolytic, proteid-digesting ferment; (2) amylopsin, an amylolytic or starch-digesting ferment; (3) steapsin a lipolytic or fat-splitting ferment; and (4) a milk curdling ferment. Besides these, which pass into the duodenum to perform their functions and which we

shall see afford us certain signs in the excretions if they are absent, there is presumed to be an internal secretion, probably a ferment, secreted by the islands of Langerhans and passing into the blood. This may be termed a

FIG. 5.

Micro-photograph of normal pancreas showing islands of Langerhans.

glycolytic ferment and when it fails, as occurs in certain inflammatory and other conditions, one of the results is glycosuria.

[Mr. Mayo Robson then recounted the nervous, vascular, and lymphatic supply of the pancreas in their bearing on the pathology of the gland, and continued:—]

Symptomatology and pathology.—As our knowledge of the functions of the pancreas, both with regard to digestion and metabolism, is becoming fairly well established it would seem probable that any departure from the normal would lead to such considerable disturbance of function that the symptomatology of any of the diseases of the pancreas would be so marked as to make the diagnosis easy. But this is far from being the case for several reasons: First, it is seldom the case that the pancreas is diseased without other organs participating—e.g., the relations between cholelithiasis and pancreatitis; between gastro-intestinal catarrh and catarrh of the bile and the pancreatic ducts; between ulcer or tumour of the stomach and extension to the pancreas; between affections of the liver, colon, lymphatic glands, and duodenum and pancreatic disease. Secondly, every function performed by the pancreas may be vicariously taken up by another organ, except the glycogenic function, and that we are not yet certain about. The stomach can digest albumin, the salivary and intestinal glands have the power of digesting starches, and the bile and intestinal secretions can emulsify fats. Thirdly, a considerable portion of the gland may be necrosed and cast off or otherwise disabled and yet the portion remaining may apparently be sufficient to carry on the functions of the pancreas. For instance, in a case of my own, a patient, who is now perfectly well, had necrosis of the pancreas which I removed at operation. As may be seen, a good proportion of his pancreas is on this table. Fourthly, in some cases the true cause of the disease may lie in the pancreas and yet all the symptoms may be caused by implication of another organ. For instance, cancer of the head of the pancreas produces intense jaundice and distension of the gall-bladder, giving the appearance to the uninitiated of disease of the liver or bile-ducts, a symptom to which I drew attention in a paper at the London Clinical Society in 1889. Again, a tumour of the pancreas may compress the intestine and produce intestinal obstruction or lead to pressure on the neighbouring ganglia and cause most violent pain that may be referred to spinal disease, to aneurysm, or to anything but the real cause. Thus it will be seen that very conflicting combinations of symptoms may arise and lead to great difficulty in diagnosis unless we can find some definite signs that will help us to say whether or no the pancreas is participating in the disease in question. I hope to show that this may be possible.

I have decided, before describing any of the special diseases of the pancreas, to consider certain symptoms apart, and as they are intimately associated with pathological questions, it is more convenient to take symptomatology and pathology together. The symptoms may be conveniently classified under (1) digestive symptoms; (2) physical signs; (3) metabolic symptoms; and (4) symptoms artificially produced. 1. Digestive symptoms: (*a*) steatorrhœa or fatty stools; (*b*) azotorrhœa or faulty digestion of albuminous foods; (*c*) sialorrhœa; (*d*) diarrhœa; (*e*) dyspeptic disturbances; (*f*) emaciation; and (*g*) nausea and vomiting. 2. Physical signs: (*a*) presence of swelling or tumour; (*b*) fever; (*c*) pain and tenderness with muscular resistance; (*d*) pressure on adjacent organs; (*e*) hæmorrhage; and (*f*) jaundice; 3. Metabolic symptoms: (*a*) glycosuria; and (*b*) other urinary changes. 4. Special symptoms obtained by artificial means: (*a*) alimentary glycosuria; and (*b*) Sahli's symptoms.

DIGESTIVE SYMPTOMS.

Steatorrhœa or fatty stools.—Although Claude Bernard, from experiments which caused the degeneration of the pancreas, came to the conclusion that the pancreatic juice caused the cleavage and emulsification of neutral fats and aided the absorption of fats in the intestine, yet the fact that the cleavage and the emulsification of fats are performed also by the bile, the intestinal juices, and the bacteria in the intestinal canal shows that the symptoms of steatorrhœa cannot be absolutely relied on in pancreatic disease. Abelmann's and Minkowski's observations on dogs are most important and interesting and they have been confirmed by Sandmeyer, Cavazzani, Balli, and Rosenberg. When the pancreas was entirely removed non-emulsified fat was not at all absorbed, and emulsified fat only in small amount (18·5 per cent.) The absorption of fat in the form of milk was much more favourable; on the administration of large amounts 30 per cent., and with smaller amounts 53 per cent., were absorbed. In case of partial extirpation small amounts of emulsified fat were about half used up; after the administration of larger amounts, 70 to 150 grammes, the consumption was not so good (lowest value 30 5 per cent.). Milk was very well absorbed, up to 80 per cent. Administration of pig's pancreas as food facilitated the absorption of fat after the extirpation of the pancreas. Abelmann concludes that all fat with the exception of milk needs unquestionably the influence of the pancreas for its absorption.

In clinical observations as to fatty stools many of the older clinicians relied on naked-eye observations which we now know to be fallacious; for though in some cases where fat is parted with in abundance it is manifest to the patient himself, in other cases a large amount of fat may be passed and only found on chemical investigation of the stools. Kuntzmann in 1820 and Bright in 1833 associated fatty stools with pancreatic disease. To show that the matter is not quite simple, Friedrich Müller found fatty stools in the absence of pancreatic disease, and in a case of obstruction of Wirsung's duct by calculus the fat in the motions was normal, though the last observation does not necessarily carry much weight as Santorini's duct may have been patent. It will be seen that experiments on animals and clinical observations on man do not altogether harmonise. We may, however, derive assistance in the diagnosis of pancreatic disease if we bear in mind the following conclusions:—1. Fat occurs in the stools in three forms: (*a*) as fat droplets; (*b*) as fatty acid crystals; and (*c*) as soap crystals. 2. The capacity for digestion and absorption of fats is limited; if therefore fat be taken in large quantities it is found in the stools. 3. Steatorrhœa occurs in some cases of jaundice, in some cases of enteritis, and in some affections of the pancreas, but in none of these constantly. 4. When jaundice and interstitial pancreatitis coexist there is a great excess of fat in the stools. 5. The presence of an excess of fat in the motions in the absence of jaundice and diseases of the intestine is suggestive of pancreatic disease. 6. If the pancreatic reaction (to be described later) be found in the urine along with steatorrhœa some affection of the pancreas is almost certain. 7. If azotorrhœa be found along with steatorrhœa it is almost certain that the pancreas is diseased, and if the pancreatic reaction in the urine, diabetes, and an epigastric tumour be present the diagnosis is certain.

The following case is reported by Oser. A woman, aged 39 years, had had diarrhœa since the summer of 1892. The patient became emaciated yet the appetite remained

good. Fæcal evacuations appeared regularly every night, were unusually copious, of the consistency of thick porridge and of cadaverous odour, chocolate-coloured, and always abundantly covered with fat rings. On Jan. 11th, 1893, he saw the patient for the first time and found steatorrhœa. The investigations of the stools gave the following result: large in amount and of the consistency of thick porridge; in the sediment were scattered white particles. Microscopic examination showed: (1) very numerous fragments of striated muscle in the main with well-preserved structure; (2) numerous fat acid needles and fat drops; and (3) bacteria and detritus. After drying the stools for several days on the water-bath in order to determine the amount of fat there were obtained 4·6325 grammes of solid substance, in which 2·1265 grammes were fat, representing 45·8 per cent. of the dried residue. The ether extract consisted almost entirely of neutral fat. On Jan. 18th he found in the epigastrium a distinct, hard, round tumour which was diagnosed as carcinoma of the head of the pancreas. In March jaundice developed. At the beginning of April an exploratory laparotomy was undertaken and the diagnosis confirmed. My own experience in a large number of pancreatic cases that have come under my observation has been the almost universal presence of an increased amount of fat in the motions, either in the shape of oily particles or of solid fat or of fatty crystals, which, if normal, should not contain more than 5 per cent.

The characteristic white stools that are often seen in pancreatic disease in the absence of jaundice owe their pale colour entirely to the solidification of the fat when the motions cool, although there may be a normal amount of bile present, and the greasy bulky motions so often seen in pancreatic disease with or without jaundice are often coated with almost pure oil. This is frequently remarked on by patients as floating on the surface of the urine passed at the same time.

In disease of the pancreas, interference with the digestive functions will lead to steatorrhœa and I have often noted it in acute hæmorrhagic, necrotic, and suppurative pancreatitis, in calculus of the pancreas, in cancer, and in some cases of cyst, where jaundice had accompanied the cyst formation. I have also seen an almost entire disappearance of the fat in some of these cases after the administration of pankreon tablets, liquor pancreaticus and sandwiches of raw pancreas, as well as a complete disappearance in many cases after surgical treatment.

Azotorrhœa or faulty digestion of albuminous foods.—Fles, so far back as 1864, found in the stools of a diabetic very numerous unchanged bundles of striated muscle fibres which disappeared when the patient had a calf's pancreas administered daily and reappeared when it was omitted. In dogs without a pancreas Abelmann found that albuminous substances were absorbed to the extent of about 44 per cent., and in those where the obliteration was incomplete 54 per cent. was absorbed. When pig's pancreas was given with the meats the amounts absorbed were respectively 74 and 78 per cent. De Benzi, Cavazzini, Sandmeyer, Rosenberg, and others found similar results. The conclusions we may form concerning this symptom are: 1. The digestion of nitrogenous foods is not solely the function of the pancreas. 2. As the normal stools of meat-eaters contain a small proportion of undigested muscle fibres and as in febrile conditions, in disorders of the stomach, and in enteritis they may be found in excess, their presence in the motions is no proof of disease of the pancreas. 3. If azotorrhœa be found along with liporrhœa the presence of pancreatic disease should be suspected. 4. If azotorrhœa and liporrhœa be found associated with diabetes or with tumour of the epigastrium pancreatic disease is extremely probable. 5. If azotorrhœa and liporrhœa be found associated with the pancreatic reaction in the urine pancreatic disease is certainly present.

My experience of azotorrhœa is that it is not so readily noticed as steatorrhœa and my attention is hardly ever drawn to this symptom by the patient, though a careful naked-eye examination of the stools in nearly all diseases where the digestive properties of the pancreas are interfered with has shown the presence of muscular fibres and a microscopic examination has confirmed the observation. This, when taken with other symptoms, is an important point to notice.

Sialorrhœa pancreatica or excessive pancreatic secretion.—This has been referred to by Senn who suggested a causal relation between hyper-secretion of the pancreas and the diarrhœa which is sometimes associated with cysts and degeneration of the pancreas. Actual salivation has been noticed in the case of cysts reported by Ludolf and Battersby. Holzmann and others have reported the same symptoms in the case of pancreatic calculi which they explain as a reflex phenomenon. In the cholera epidemic in Bern in 1861 a large amount of leucin was found in the intestinal evacuations, suggestive of excessive action of the pancreas. Personally I have not seen salivation in any of my cases of pancreatic disease and I do not consider it of importance from a diagnostic point of view.

Diarrhœa pancreatica and alteration in the stools.—In many cases I have mentioned what one might almost term a characteristic sign of pancreatic disease in the shape of exceedingly bulky, soft, greasy, pale motions, evidently due to the patient's want of digestive power and the passage onwards of the bulk of the food taken. These characteristic motions contain manifest unaltered fat and muscle fibre and are extremely offensive. Patients frequently describe them as diarrhœa, but an examination will show that this is usually an incorrect designation, the motions being bulky and soft and not liquid in consistency. They are due not only to the increased amount of fat and nitrogenous matter passing away undigested but to the bulk of hydro-carbonaceous food being parted with, sometimes unaltered. The symptom is a very noticeable one and when it occurs in cases of jaundice it may nearly always be taken as an indication that the pancreatic functions are being interfered with either by an interstitial pancreatitis or some other form of disease. I have more frequently noticed these symptoms in chronic inflammatory conditions than in cancer, the reason being that the appetite is more interfered with by the latter than by the former disease; hence also the symptom is more apt to be noticed in the earlier than the later stage of the disease unless large amounts of milk be given, when the bulk of it may pass away in this form of spurious diarrhœa. Blood may be noticed in the motions occasionally but it is not a regular symptom until the hæmorrhagic tendency occurs later in the disease or unless there happens to be an ulcerating malignant growth present. In some cases constipation exists, the motions being still very bulky and, as a rule, pale. Abscesses of the pancreas and pancreatic cysts have been known to rupture into the intestine and their characteristic contents have been found in the motions. I have personally seen this in one case and in another I have seen the characteristic matter vomited. A necrotic pancreas has been passed through the intestine and cases have been reported by Leichenstern and Minnich in which pancreatic calculi have been passed per anum.

In a paper on the Clinical Significance of Colourless Stools without Jaundice and their Connexion with Disease of the Pancreas, read before the Royal Medical and Chirurgical Society in 1889, Dr. T. J. Walker of Peterborough pointed out the fact that white motions might be indicative of pancreatic disease, although the bile salts are being discharged in the normal way. In discussing this subject a few weeks ago with Sir Lauder Brunton he directed my attention to a lecture in his work, "Disorders of Assimilation, Digestion, &c.," which was published in the *Edinburgh Medical Journal* for February, 1900, where he had referred to the subject of whiteness of the motions and in which lecture he made the following remarks: "The whiteness is due not to the absence of bile as one would expect but to the presence of undigested fat." He referred to a case which he had seen ten years before. He said: "The motions were as white as arrowroot but were tougher than ordinary formed motions, so much so that instead of breaking into pieces they fell into a very peculiar shape. They looked like a snake coiled up with the head projecting as if ready to strike. An analysis of the fæces was made by Dr. Sidney Martin who found that the liver was doing its work and that the motions contained bile, although in small quantity. Biliverdin was present in an unaltered form, though only an indication of biliary acids could be obtained. The reason of the motions being so white was the fact that the milk was not digested and therefore it appeared in the motions." Sir Lauder Brunton goes on to say that want of change in the fat points to some extent to alteration in the pancreas.

Dyspepsia and alteration of appetite.—I have found dyspeptic disturbances to be constantly associated with affections of the pancreas; they take the form of anorexia, pain and fulness after food, flatulency with offensive eructations, heart-burn, nausea, distaste for fats and for meat.

In the case of a woman, aged 28 years, to be referred to later under "Chronic Pancreatitis," a biliary fistula was established in order to relieve the jaundice and by drainage to cure the pancreatitis that was causing pressure on the common bile-duct. All the above-mentioned symptoms were well-marked both before the operation and when the fistula was discharging, and the patient had such a loathing for food that she became extremely emaciated. A cholecystenterostomy was performed and within 12 hours of the restoration of the bile and pancreatic fluid to the duodenum she expressed herself as hungry, a sensation which she said she had not felt for many months; during the month after operation she put on flesh very rapidly and three months later had gained two stones in weight. In several cases where dyspeptic disturbances have been well-marked both in simple and in malignant disease of the pancreas I have found the patients to be markedly relieved of their symptoms and to gain weight by the administration of pankreon tablets or of liquor pancreaticus immediately after meals.

Emaciation.—Ever since pancreatic diseases have been recognised, emaciation has been regarded as a well-known symptom. I have known a patient, a man, aged 59 years, suffering from chronic pancreatitis, to lose eight stones in a little over two years and to regain weight rapidly after a choledochotomy and the removal of a calculus that was obstructing the pancreatic duct, and I also know of another case in which the patient lost five stones in three months and after operation and relief of the condition to gain three stones in a corresponding period. It is not surprising that emaciation should occur in cancer of the pancreas, in which indeed it is most marked, or in diabetes of pancreatic origin, but it may occur in cystic disease, as in Kuster's case, in which the patient lost two stones five pounds in four months, in chronic pancreatitis, as in the cases I have mentioned, and also in calculous disease.

The disturbance of digestion may afford a sufficient explanation in some cases, but in the malignant and in the atrophic cases the interference with the metabolic function of the pancreas must also be partly responsible for the rapid emaciation. Alone, emaciation would not of course justify a diagnosis of pancreatic disease, but if with rapid loss of flesh, fat and muscle fibres be found in the fæces and pancreatic crystals in the urine the diagnosis of disease of the pancreas may be confidently made.

Nausea and vomiting.—These symptoms are frequently associated with acute pancreatitis and I have seen the vomiting so violent as to suggest acute intestinal obstruction, but in the other forms of pancreatic disease it is not a common symptom and when present it is often due to the neighbouring organs—stomach or duodenum—participating in the trouble or being pressed on. There is nothing specially characteristic in the vomited matter unless, as occurred in one of my cases, extremely offensive pus and altered blood be vomited, when it may point to the rupture of a pancreatic abscess into the stomach. In acute pancreatitis altered blood, so-called "black vomit," is seen at an earlier stage than in any other peritoneal condition.

PHYSICAL SIGNS.

Tumour.—The situation of the pancreas behind the stomach and in front of the spinal column places it in almost the worst possible place for palpation, and in normal circumstances, if the patient be at all stout, it can only be indistinctly felt, but where the patient is thin and in cases of gastroptosis it can readily be defined when the muscles are relaxed and a warm flat hand is applied firmly to the epigastric region. It is commonly stated in text-books that acute and chronic inflammation and even abscess rarely, if ever, cause a perceptible enlargement of the organ. In this view I do not agree, for I have over and over again felt enlargement of the pancreas in these conditions, and I think further experience will show that in many cases a distinct swelling may be felt, which in the acute cases is made up of the swollen pancreas with surrounding effusion of blood and inflammatory fluid, together with matted omentum, in the subacute cases it being due to suppuration and in the chronic cases to a tumefaction of the gland itself. In cancer of the head of the pancreas the only tumour that is ordinarily felt is the swelling caused by an enlarged gall-bladder which can be readily palpated in a considerable proportion of cases. In tumour of the body or tail, as well as in some cases of cancer or sarcoma of the head of the pancreas, palpation readily discovers the swelling, and by distending the stomach with gas, either by means of carbonate of soda and tartaric acid given in separate doses or by pumping in air through the stomach tube, the relation of the stomach to the tumour can be readily made out. Resonance on percussion owing to the position of the stomach, unless the stomach is empty, communicated non-expansile pulsation, and very slight movement on deep inspiration are characteristic of swellings of the pancreas. In cystic disease of the pancreas tumour is at first frequently the only symptom, the position, as I shall hope to show, depending on the part of the organ from which the cyst springs. It will thus be seen that the absence of a tumour does not negative serious disease of the pancreas, though the presence of a swelling when taken with other symptoms, especially the urine test, affords valuable evidence of disease.

Fever.—An increase of temperature is, as a rule, associated with acute and subacute pancreatitis, but only rarely with any of the more chronic forms of inflammation, and as a rule it is absent in cystic disease, in calculus, and in new growths. In acute pancreatitis the temperature may be high but in other cases, as in the hæmorrhagic form, it is usually subnormal. In suppurative pancreatitis I have seen the temperature assume a hectic form but in one case coming under my notice it was subnormal and in another it was persistently from 101° F. to 102° or 103° and associated with rigors. In cancer of the head of the pancreas the temperature is generally subnormal. It will thus be seen that fever as a symptom is extremely variable and alone is no guide, though when associated with digestive, metabolic, and certain physical signs it is a symptom of the greatest importance in making a differential diagnosis.

Pain and tenderness.—These symptoms, though important when present, are so variable that even the entire absence of pain and tenderness is no proof that the pancreas is normal. My experience has been that both pain and tenderness are as a rule absent in malignant disease of the head of the pancreas, though, on the other hand, in some exceptional cases of cancer or sarcoma both of the head, body, and tail of the pancreas the pain may be excruciating, this depending either on pressure on, or involvement of, the great sympathetic ganglia, or on pressure on, or invasion of, the neighbouring viscera, especially the stomach or the duodenum. Small scirrhus tumours are as a rule characterised by the absence of pain while large growths are often marked by constant and extreme agony. In the various forms of pancreatitis pain and tenderness in the epigastrium are, as a rule, well marked and the more acute inflammations are characterised by excessive tenderness on pressure, rigidity of the recti, and pain of an agonising character. In chronic pancreatitis pain and tenderness, though usually present, may be little marked, but in some cases the pain is paroxysmal and severe and epigastric tenderness is well pronounced. Cysts may be quite painless and free from tenderness but in some cases I have seen both pain and tenderness well marked. Even in abscess of the pancreas pain may be absent, as has been reported by Stibler, though in the cases that I have seen pain and tenderness were both pronounced.

Calculus of the pancreas may exist for years undetected and unsuspected without causing any pain but in one case that I operated on the patient pointed to a tender and painful spot on the left of the middle line which she begged of me before operation to examine specially and at which exact spot I found and removed by operation a pancreatic calculus. If a calculus reaches the orifice of the pancreatic duct or gets into the ampulla of Vater severe pain occurs in paroxysms resembling a gall-stone seizure and will then be associated with jaundice. As to the character of the pain it may be continuous or paroxysmal and may be limited to the epigastrium or radiate round either side of the thorax. I have found pain in the back, under the left scapula or between the scapulæ, to be more frequent than pain beneath the right scapula thus serving to distinguish it from gall-bladder pain. "Cœliac neuralgia" was a term long ago applied to epigastric pain such as is associated with some forms of pancreatic disease and such pain may pass to the cardiac region and resemble angina pectoris both in its intensity and in its effect on the circulation. It will thus be seen that while pain is a guide to diagnosis it is not pathognomonic of any special disease except acute pancreatitis.

Pressure symptoms.—The presence of ascites owing to involvement of the portal vein is seen at times in the later stages of cancer of the pancreas, when at the same time

there may be also pressure on the inferior vena cava and œdema of the lower limbs. When the duodenum is surrounded by the head of the pancreas, an extremely rare condition, or where the gland partly surrounds the bowel, any growth or even inflammation of the head of the pancreas may lead to obstruction to the passage of the stomach contents, to gastric dilatation, and to vomiting, as in pyloric stenosis. Specimens which I will now show on the screen demonstrate how the stomach, the duodenum, and the colon may be pressed on both by cysts and new growths, such as cancer or sarcoma, and how the viscera contiguous to the pancreas may be seriously displaced, the stomach, for instance, being pushed upwards beneath the diaphragm or downwards below the umbilicus. Distension of the gall-bladder and jaundice are so frequently found in cancer of the head of the pancreas that they have become a well-known sign of the disease and in some cases of chronic pancreatitis the same sequence of events may occur, the presence or absence of this sign being dependent on the relation of the common duct to the head of the pancreas. Pressure on, or involvement of, the solar plexus may give rise to agonising pain. In some cases the hepatic duct may be pressed on when the common duct is free, as in a case I saw a few months ago where there was jaundice without distended gall-bladder owing to pancreatitis involving a prolongation of the gland upwards towards the liver. The pressure of a pancreatic cyst passing upwards to the under surface of the diaphragm may cause dyspnœa from interference with the functions of the heart or the lungs, and in case of inflammatory effusion in the lesser peritoneal sac there may be pressure on the pericardium through the diaphragm leading to distressing cardiac symptoms.

Hæmorrhage.—Besides the local hæmorrhage that may be known as pancreatic apoplexy and the form known as hæmorrhagic pancreatitis, there is in many pancreatic affections a tendency to general hæmorrhage from wounds or from mucous surfaces and to petechial hæmorrhage in the skin or to more extensive bleeding in the subcutaneous tissues. It is well recognised that a hæmorrhagic condition coexists with cancer of the head of the pancreas. Some years ago I thought this to be altogether dependent on the cholæmia, until increased experience in operating on deeply jaundiced patients has taught me that there is much less danger of serious hæmorrhage in patients jaundiced from gall-stones than in those where the jaundice depends on pancreatic disease. This tendency may be due to an altered condition of the blood both in its tissue elements and chemically. In the cases where the blood has been examined for me a very marked diminution in the number of blood plates has been found and the coagulating period has always been seriously delayed.

As for the chemical changes, it is well known that a diminution in the lime salts leads to a tendency to hæmorrhage, and as we have found that there is in nearly every case of pancreatitis a profuse excretion of lime in the shape of oxalates this gives another explanation and also explains the beneficial effects resulting from the administration of calcium chloride. In urine containing bile, calcium oxalate crystals are not generally found microscopically because the bile takes up the lime salts, but after the jaundice has been relieved by operation an examination of the urine will, as a rule, show oxalate crystals so long as any pancreatic trouble continues. In several cases of cancer of the pancreas on which I have operated the bleeding has been the immediate cause of death. In one case sent to me in 1888 by Professor T. Clifford Allbutt, a cholecystotomy was followed by persistent oozing of blood from the interior of the gall-bladder and from the stitch punctures, which resisted all the then known remedial measures in the way of styptics, pressure, transfusion, &c., and proved fatal on the ninth day. In another case of cancer of the head of the pancreas, sent to me by Dr. W. Scatterty of Keighley, a cerebral hæmorrhage on the tenth day produced a fatal result. In neither of these cases was there any peritonitis or other cause than the hæmorrhage to account for death. Now in another patient equally deeply jaundiced whom I saw with Dr. T. Churton in 1889, but where the disease was dependent on cancer of the common bile-duct above the entrance of the pancreatic duct, there was no hæmorrhage, although the patient survived several weeks and died from exhaustion due to the disease and to the suppurative cholangitis accompanying it. I could give many similar comparisons showing the difference between the behaviour of the blood in the two classes of cases.

Before operating on these cases I now always administer calcium chloride in from 30 to 60 grain doses thrice daily for from 24 to 48 hours previously to operation and by enema in 60 grain doses thrice daily for 48 hours afterwards; this is usually successful in correcting the hæmorrhagic tendency. The following cases show its efficiency subsequently to operation.

A woman, aged 38 years, was suffering from deep jaundice associated with gall-stones in the common duct and chronic pancreatitis. There was no bleeding at the time of the performance of duodeno-choledochotomy as calcium chloride had been administered for several days before operation. The drug was inadvertently omitted after operation and on the third day violent hæmorrhage occurred which was arrested by opening up the wound and packing with gauze and at the same time giving calcium chloride in 60 grain doses twice and afterwards in 30-grain doses for several days. No recurrence of bleeding occurred and a good recovery was made.

In the case of a male patient, aged 42 years, suffering from cirrhosis of the liver, gall-stones in the common duct, and chronic pancreatitis, no bleeding occurred at operation owing to the saturation of the blood with lime salts; in consequence of this they were left off the second day after operation. Bleeding occurred very freely on the sixth day in the form of general oozing which was permanently arrested by the free administration of calcium chloride, after which recovery occurred.

In a case of suppurative catarrh of the pancreas in a gentleman, aged 65 years, the same freedom from hæmorrhage was found at operation after the administration for some days of chloride of lime which could not be given as the rectum was intolerant of injection. On the seventh day free bleeding occurred which was arrested by giving 30 grains of calcium chloride every two hours.

Other cases could be given were it desirable to show the remarkable effect of saturating the blood with lime in order to prevent or to arrest bleeding in these cases. In operating on these cases of pancreatic trouble, especially if associated with jaundice, it is important carefully to ligature all vessels and not to trust to simple forci-pressure.

Jaundice.—The now well-recognised relation between pancreatic and gall-stone trouble would lead one to suspect that jaundice would be a frequent accompaniment of pancreatic disease but this symptom is by no means constant. The relation of the common duct to Wirsung's duct and to the head of the pancreas is generally the determining factor of deep jaundice, though in nearly all inflammatory affections an extension of the inflammation takes place and sets up a more or less severe catarrhal jaundice. If, as is the case in 38 per cent. of bodies (Helly), the common duct passes behind the head of the pancreas either an acute or chronic pancreatitis, or even a cancer of the pancreas, may run its course without the appearance of jaundice, but if the common duct lies in a deep groove or is imbedded in the head of the pancreas, as occurs in 62 per cent. of cases, either pancreatitis or growth of the head of the pancreas must necessarily compress the bile-duct and lead to jaundice of greater or less intensity. It may, perhaps, only be a coincidence, but Dr. Cammidge tells me that in all the specimens of urine that he has examined for me from patients suffering from pancreatitis, bile has been found in just over 60 per cent. If common duct cholelithiasis be the cause of pancreatitis jaundice will, of course, be present. Deep jaundice associated with distended gall-bladder is significant of cancer of the head of the pancreas, whereas if the cause of the jaundice be gall-stones in the common duct the gall-bladder is nearly always contracted and not capable of being felt.

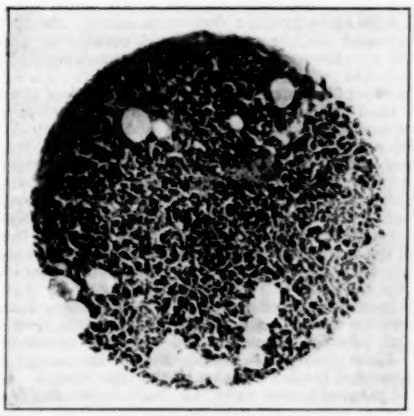
METABOLIC SYMPTOMS.

Diabetes and glycosuria as symptoms of disease of the pancreas.—In speaking of the functions of the pancreas mention was made of an internal secretion which recent researches have apparently traced to the islands of Langerhans. It is believed that the absence of this secretion owing to the destruction of these islands leads to diabetes. The earliest observations connecting the pancreas with diabetes was by Cowley in 1788 in the *London Medical Journal*. The patient was an alcoholic, 34 years of age, and a post-mortem examination showed the pancreas to contain numerous calculi. In 1821 Chopart reported the case of a diabetic, aged 19 years, who also had jaundice and stentorrhœa. A necropsy revealed the head of the pancreas to be

forming a hard, nodular tumour and the body to be atrophied, the common bile-duct being obstructed.

The classical experiments of von Mering and Minkowski, who showed that the total removal of the pancreas in dogs regularly resulted in diabetes, and the important discovery of Opie that hyaline degeneration of the islands of Langerhans was present in a girl, aged 17 years, who had died from diabetes, followed by other observations that diabetes is only present when the islands of Langerhans are involved as in the interacinar type of chronic interstitial pancreatitis, have now apparently established the fact that in diseases of these islands we have the origin of pancreatic diabetes. This explains many of the anomalies that were previously incapable of explanation and renders it quite easy to see why glycosuria should be present in some diseases of the pancreas and not in others. For instance, in chronic interstitial pancreatitis of the interlobular type there is no glycosuria, and the lantern slides which I now show, kindly made for me by Dr. P. J. Cammidge, demonstrate that in this condition the islands of Langerhans are quite free from disease (Fig. 6). In the next slide, one of chronic interstitial pancreatitis of the interacinar form, it will be seen that the islands of Langerhans are involved and in this case diabetes was found and led to death. The next slide is from a case of general cirrhosis of the pancreas with diabetes. Here it will be noticed that the atrophic process has involved the islands. The next slide shows hyaline degeneration of the islands of Langerhans where diabetes was present. This slide is copied by permission from Dr. Opie's monograph of a specimen which he was good enough

FIG. 6.



Micro-photograph showing chronic interstitial pancreatitis of interacinar variety. From a case of diabetes.

to demonstrate to me in the Johns Hopkins Laboratory (Fig. 7). In extensive malignant disease the whole gland may be destroyed and then diabetes will be present, as in the photograph of a specimen which I show on the screen.

In cases of cancer part of the gland may remain unaffected—glycosuria will not then be present, and the same applies to cysts and other tumours, as well as to interstitial pancreatitis, which may be limited to one part of the gland. Out of a large number of cases of disease of the pancreas that I have seen I have only occasionally found glycosuria present, and in such cases, if well marked, I have not recommended operation, though I am not prepared to say that benefit might not arise by drainage in some cases of interacinar pancreatitis if caught early. As yet, however, I have no experience to bring forward to prove this.

It will thus be seen that glycosuria is not common and cannot be relied on as a diagnostic symptom in diseases of the pancreas, but when it exists along with other signs it is extremely serious and, in fact, as a rule indicates an incurable condition.

Other changes in the urine.—In consequence of the indefinite character of the symptoms in various diseases of the pancreas a want has been long felt for some distinctive signs by which affections of the pancreas may be diagnosed. From the important metabolic functions of the gland attention was naturally given to the urine and in turn indicanuria, maltosuria, pentosuria, lipuria, and glycosuria have been advanced as of diagnostic importance in pancreatic troubles. With regard to indicanuria Gerhardt in 1886 from observations on man, and Piseni from experiments on dogs, thought that changes in the amount of indican in the urine afforded diagnostic data in pancreatic diseases, but

FIG. 7.

Micro-photograph showing hyaline degeneration of the islands of Langerhans. (Opie.)

Katz and De Renzi's experiments on animals disproved this, and many observations on my own cases and those by other clinical observers enable us to say that the amount of indican in the urine is no guide to the presence or absence of disease of the pancreas. Le Nobel and von Ackeren separately found maltose or some allied sugar in two cases of pancreatic disease but in a large number of observations on the urine from patients suffering from different forms of pancreatic disease it has not been found. This, therefore, cannot be relied on as an important symptom. Pentosuria, according to Salkowski, is of greater diagnostic importance, but further observations showed it to be inconstant and to be present in other than pancreatic conditions. Lipuria is a rare condition and although described by Mr. Alfred Clark in THE LANCET of August 16th, 1851, p. 152, as having been associated with a case of cancer of the pancreas, it is known to result from divers causes. Of all the cases of pancreatic disease that I have seen I have only once found lipuria as a symptom and that was in a case of chronic pancreatitis in a lady, aged 44 years. It was associated with liporrhœa, azotorrhœa, bulky stools, and with a well-marked pancreatic reaction in the urine, the cause being apparently an extension from duodenal catarrh. The abdomen was opened and a swelling of the pancreas was discovered with a number of adhesions surrounding it, but no gall-stones were found. Drainage of the bile-ducts by a simple cholecystotomy completely cured the pancreatic condition, and when the urine was examined a year later there was an entire absence of the pancreatic reaction. Lipuria is difficult to explain and in the case I have mentioned it was not associated with any signs of diseased kidney. As it occurs so seldom it cannot be relied on as an important point in affections of the pancreas.

As showing how little importance has been attached to urinary analysis as an aid to diagnosis Osler says: "In brief, the condition of the urine in diseases of the pancreas has no special peculiarities." I hope to be able to prove that this statement will in future need modifying. As the result of a large number of observations on a considerable number of cases I hope, in conjunction with Dr. P. J. Cammidge, to be able to adduce proofs that a certain reaction may be obtained from the urine in the greater number of, if not in all, diseases of the pancreas, which affords considerable

help in diagnosis, but further than this, our experience leads us to believe that it may be possible to distinguish between acute and chronic inflammation and between simple and malignant disease. The presence of glycosuria does not prevent the pancreatic reaction being obtained but the sugar must first be removed by fermentation. In this way, therefore, it may be possible to make the diagnosis of pancreatic diabetes. At first when the method was crude and incomplete and our experience in its employment was small, the conclusions, though helpful, were not so certain that one dare venture to assert more than a hope that it would be a help in diagnosis, and this I announced in an address before the American Surgical Association in Baltimore in May, 1901. From that time onwards the test has been applied in every case that has come under my care where the pancreas was suspected and in a large number of control cases where there was no suspicion of pancreatic disease. The control experiments led to the discovery that certain allied crystals were obtained in some other diseased conditions, such as cancer and chronic inflammation, where marked tissue changes were taking place, but fortunately the difference in the shape of the crystals and the increased time they took to dissolve in sulphuric acid and other tests enabled them to be differentiated. There is still a great deal of work to be done on the subject which may have other important issues but we think the time has come when a further announcement should be made so that the utility of the method may be tested by other observers. Of the manner in which these crystals were found, of the method of their preparation, and of their significance, my friend Dr. Cammidge will have much more to say in his Arris and Gale lecture; of their diagnostic importance I will now give my experience.

To give a list of all the cases that we have observed together would be easy, since all have been accurately recorded, but in this lecture it will be more useful if I group the cases. Although I have operated on over 100 patients for pancreatic disease of one kind or another, in my earlier cases the urinary pancreatic reaction was unknown and it is only during 1900 and since that we have been employing the test systematically, but during that time several hundred analyses have been made and the diagnoses have been confirmed by operation in 56 and by necropsy in other cases.

In a considerable number of cases of cancer of the head of the pancreas with jaundice the test has been applied and either confirmed the diagnosis made from the clinical signs or proved the presence of malignant disease in the face of irregular symptoms which rendered the diagnosis doubtful, so that one has been able to advise non-operative treatment with confidence instead of having to recommend an exploratory operation which could do no real good. One of the most marked cases of this kind occurred only a month ago where no less than six medical men of eminence had advised operation in a woman, aged 48 years, in consequence of the general condition of the patient being better than one might have expected after jaundice had existed for five months had the cause depended on cancer. An examination of the urine revealed such a marked pancreatic reaction pointing to cancer of the head of the pancreas that I had not the slightest hesitation in advising non-operative treatment. This, however, did not satisfy the patient who, with the support of her medical advisers, wished to have an exploratory operation done. On opening the abdomen I found, as suspected, a very hard, nodular growth of the head of the pancreas, undoubtedly malignant. The absence of adhesions and the presence of a distended gall-bladder afforded clear evidence that gall-stones had never been present in the case.

In several cases suspected from the clinical signs and symptoms to be cancer, the disease has been proved by this test to be inflammatory and curative operations have been performed—for instance, in the case of a man, aged 51 years, seen in August, 1901, suffering from deep jaundice with great emaciation, the liver being enlarged and there being very slight tenderness. Although he had had rigors and other signs of infective cholangitis there was no history of pain beyond one slight attack of colic that was very indefinite. Cancer of the pancreas had been diagnosed and his case was believed to be hopeless. Before refusing to operate an analysis of the urine was made and a well-marked pancreatic reaction was found, pointing to inflammation and not to malignant disease. An operation was therefore undertaken on Sept. 29th, 1901, when the head of the pancreas was found to be markedly enlarged, the swelling extending well into the body of the pancreas, and five calculi were found in the lower end of the common bile-duct obstructing the pancreatic ducts. These were removed and the common duct was drained. The patient made a good recovery and in two months had gained one stone three pounds. A report received last year was to the effect that he was in perfect health.

In another case that I saw in October, 1903, a patient, aged 57 years, who had resided in India for years, where he had suffered from fever which had left him with a greatly enlarged spleen, gave a history of loss of flesh for some months preceding the jaundice which came on in July, 1903. The patient himself said that he had had no pain but his medical man said that there had been an attack of pain preceding the jaundice. Loss of flesh was well marked and the patient was so ill, there being slight œdema of the feet and enlargement of the spleen to below the umbilicus and of the liver to the umbilical level, that I had very little doubt of the case being malignant. A consulting physician who saw him before me found ague organisms in the blood and after watching him for a time considered the case unsuitable for operation. Before deciding finally an examination of the urine was made, when a well-marked pancreatic reaction was found pointing to inflammation and not to malignant disease and an analysis of the fæces showed steatorrhœa and azotorrhœa. An operation was therefore performed on Nov. 5th, 1903, when the liver was found to be enlarged, dark, and granular, as if in the first stage of cirrhosis, and after separating numerous adhesions a rounded gall-stone of the size of a small walnut was discovered in the common duct, where it was pressing on the pancreas. The pancreas was considerably enlarged but it did not embrace the common duct. After the removal of the calculus a probe passed quite easily into the duodenum and as the duct was not embracing the pancreas I did not consider it necessary to drain it. Recovery was completely satisfactory and the patient is now well.

In one case diagnosed by an eminent physician as cancer of the head of the pancreas, that of a man, aged 65 years, no pancreatic reaction was obtained and on the strength of this test an exploratory operation was performed, when the pancreas was found to be healthy and a gall-stone was removed from the upper part of the common duct, with the result that the patient is now well. In two cases of malignant disease, "cancer of the head of the pancreas and cancer of the biliary papilla" with deep jaundice, the test showed the presence of inflammation of the pancreas and exploratory operations were in consequence undertaken, but the error was not in the test but in our reading of it. The fact is that in many cases of cancer of the pancreas a catarrhal inflammation ensues as a secondary symptom, just as a catarrhal jaundice frequently supervenes in cancer of the liver. These cases led to modifications in the process which have prevented further mistakes of the same nature. In two cases of pancreatic cyst where the diagnosis was doubtful the test showed the presence of pancreatitis which is usually present in the interstitial form in these cases. In three cases of acute pancreatitis the test answered perfectly in confirming the diagnosis. In two cases of suppurative catarrh, associated with fever and jaundice, the presence of pancreatic inflammation was proved by an abundant crop of crystals. In a number of cases of simple catarrhal and of interstitial pancreatitis, both with and without gall-stones, the pancreatic reaction has enabled a diagnosis to be made and active treatment to be applied. In two cases of abscess of the pancreas the reaction was well marked and proved to be correct at the operation and in two cases of pancreatic calculi the reaction proved the presence of interstitial inflammation. Almost equally important have been some of the negative reactions in chronic biliary catarrh, in cirrhosis of the liver, and in tumours supposed to be pancreatic from their situation behind the stomach. From a pathological and clinical point of view the observations made on the urine of patients long after being operated on for pancreatic inflammation and supposed to be quite well are most instructive and will be mentioned in my next lecture.

SPECIAL SYMPTOMS OBTAINED BY ARTIFICIAL MEANS.

Alimentary glycosuria.—Minkowski has shown that if only a part of the pancreas be removed diabetes does not result but the ability of the organ to perform its normal function on carbohydrate metabolism is impaired; for if to animals

in which the pancreas has been partially removed sugar be given in large quantities temporary glycosuria results. Wille has observed the symptom in man in association with disease of the pancreas. He adopted the test of giving from two to three ounces of sugar before breakfast to 800 patients, the urine being tested before the sugar was taken and later at intervals of two hours. When the test was positive glycosuria usually occurred at the end of two hours. Of 15 patients exhibiting alimentary glycosuria who subsequently came to necropsy, ten presented grave pancreatic disease, chronic interstitial pancreatitis or cancer. Although this symptom may occur under other conditions, as exophthalmic goitre or chronic alcoholism, its presence has considerable value as an aid to diagnosis.

Sahli's symptom.—If iodoform be inclosed in a gelatin capsule, hardened in formalin, and given by the mouth it is almost unaffected by gastric digestion but is readily dissolved by the pancreatic secretion. If pancreatic digestion is normal, iodine should appear in the urine in from four to eight hours. The absence of the reaction or its delayed appearance, if the motor function of the stomach be normal, indicates, according to Sahli, an impairment of pancreatic digestion.

GROUPING OF SYMPTOMS.

With such a number of symptoms and signs as those I have related it is a mystery to me how the idea has gained so firm a hold that pancreatic diseases are, as a rule, undiagnosable. For instance, Opie only last year wrote: "Disease of the pancreas is rarely recognised during life," which is a reproach that I hope will in future have no justification. Although in any single case we may not have all the symptoms and signs that I have mentioned, yet in no case ought we to fail to find digestive or metabolic or physical signs if disease of the pancreas be present. Different diseases of the pancreas it will be seen, as one would expect, present very various grouping of symptoms, but in nearly every, if not in every, case since Dr. Cammidge and I have been working together at the subject we have found most valuable help from the pancreatic reaction. Although we must not yet say that this sign is absolutely pathognomonic, yet it is safe to make the assertion that if the test be skilfully carried out it affords most valuable positive or negative evidence when taken with other symptoms, in not only establishing the presence or absence of some disease of the pancreas but in assisting in the differentiation of simple from malignant disease, a most important matter when surgical treatment is in question.

The two pathological conditions of fat necrosis and hæmorrhage are full of interest and to do full justice to them would occupy all the time at my disposal. Although they are intimately related to pancreatitis it is desirable that they should have separate consideration.

Fat necrosis.—Fat necrosis was first described by Balser in 1882, but has since been investigated by Langerhans, Hildebrand, Dettmer, Milisch, Williams, Flexner, Opie, and many others. Experiments by Opie, who ligatured the pancreatic ducts in the cat, go to show that widespread fat necrosis may be expected to follow the operation very rapidly. A photograph of this was shown on the screen and at the same time a microphotograph of fat necrosis.

By fat necrosis is understood a disintegration or necrosis of the living fatty tissues in the neighbourhood of the pancreas or in small spots diffused widely over the peritoneal cavity or even in the pericardium or pleura or subcutaneous fat. It is associated with a splitting up of the fat into fatty acids and glycerine; the latter is absorbed but the acids being insoluble remain in the cells either as crystals, or uniting with the calcium salts of the blood they form yellowish-white patches of various sizes. Fat necrosis is commonly found in association with pancreatitis and other diseases of the pancreas and the relation between the two conditions has given rise to much speculation. As the result, however, of clinical observation and experimental evidence we may now accept the fact that it is always the result of the penetration of the fat-splitting ferment of the pancreas first into the tissues in the neighbourhood of the gland and when more extensive to the diffusion of the ferment either through continuity of tissue or by means of the lymphatics. It is important to remember that fat necrosis may be present and yet not be visible to the naked eye, although it may be discovered by a method suggested by Bender, the application of a solution of acetate of copper to the tissues. The recognition of fat necrosis by the surgeon who opens the abdomen to relieve symptoms associated with peritonitis in the upper abdomen is of the utmost importance, as it indicates a grave lesion of the pancreas, probably hæmorrhagic, gangrenous, or suppurative pancreatitis. It is said not to occur generally with suppurative inflammation, but in a case to be related shortly I found a most extensive fat necrosis in association with subdiaphragmatic abscess of pancreatic origin. It has also been said that the presence of extensive fat necrosis is a fatal sign, but a case of my own disproves this, as a patient under my care made a complete recovery after an operation undertaken for acute pancreatitis in which the fat necrosis was well marked and diffuse. Truhart has also been able to collect ten cases in which the diagnosis was made and yet an immediately fatal issue did not occur. As the ferment causing fat necrosis may be excreted by the kidneys it would form an important diagnostic sign if it could be found in the urine, but this has not yet been determined, although in one case of acute hæmorrhagic pancreatitis Opie obtained a suggestive reaction by means of ethyl butyrate, as suggested by Castle and Loevenhart.

Hæmorrhage.—Hæmorrhage in its various forms is often held up as one of the great mysteries of pancreatic affections and the free use of the term "hæmorrhagic pancreatitis" in ordinary acute inflammation, even where there has been really no hæmorrhage and in others no more bleeding into the tissues than takes place frequently in acute inflammation in other organs where the tissues are soft, has led to an accentuation of the mystery. It is well known that local hæmorrhage into the pancreas may occur apart from injury and apart from any general hæmorrhagic tendency and that, although it may be recovered from, as shown by the remains of extravasated blood in the gland in persons dying from other diseases, yet such spontaneous hæmorrhage may lead to death from collapse either immediately or after some hours. Curiously this may occur in persons apparently in good health and without any premonitory signs on which a diagnosis can be based, the only symptom at the time being those of collapse, with dyspnœa and feeble pulse. In this way, severe pancreatic hæmorrhage apart from pancreatitis, forms a disease in itself.

CAUSES OF PANCREATIC HÆMORRHAGE.

1. Vascular disease, such as atheroma and fatty degeneration, or alcoholic or syphilitic arteritis. The following case under my care appears to be one in point. An aged subject, with markedly atheromatous vessels, had a simple drainage operation performed for the relief of jaundice due to cancer of the head of the pancreas. Death occurred on the third day, almost suddenly from collapse, and at the necropsy there was found extensive effusion of blood away from the site of operation and behind the peritoneum, extending into the loins around the kidney and into the cellular tissues beneath the diaphragm, the blood being in sufficient quantity to account for death. The bleeding had manifestly arisen from the pancreas but there was no gross vascular lesion found to account for it.

The following case under the care of Draper (one of sudden death from pancreatic hæmorrhage) is reported by Osler. A woman, aged 44 years, was found dead in bed. She drank alcoholic liquors but was rarely intoxicated and in the evening before was perfectly well. In the morning she complained of headache, returned to bed, and later was found dead. At the necropsy the pancreas was seen to be infiltrated with blood throughout its whole extent; there were also a moderate amount of blood in the retroperitonaal tissue and eight ounces of reddish fluid in the peritoneal cavity.

2. Injury may be the cause. The tissues of the pancreas are comparatively soft and easily bruised, so that although anatomically it is placed in the most protected position, yet a slight injury takes more effect on it than on many other firmer organs and there is ample experience of pancreatitis resulting from blows in the epigastrium apparently trifling in character as in a case that I saw several years ago. A butler slipped and fell forward against a knifeboard projecting from the end of the table at which he was working. The blow was comparatively slight and the man did not even fall to the ground. Pancreatitis followed on what was at the beginning probably a mere bruising of the pancreas but which was followed by slight bleeding into the gland and this effusion becoming infected acute hæmorrhagic pancreatitis resulted. An exploration for the cause of the peritonitis resulted in the discovery of a large collection of highly blood-stained fluid in the lesser peritoneal sac, some of

which had burst through a small laceration in the omentum into the greater peritoneal sac. There was general peritonitis present at the time of operation and though drainage was freely adopted both from the front and back the patient did not survive many hours. Probably slight injury to the pancreas may occur in abdominal operations for gall-stones in the common duct when it is sometimes necessary to manipulate the head of the pancreas rather freely. Though I have not personally seen such an occurrence, such a case has been related recently. The photographs now thrown on the screen are examples of hæmorrhagic pancreatitis and the specimens from St. Bartholomew's Hospital Museum on the table show traumatic hæmorrhage and hæmorrhagic pancreatitis respectively.

3. Fatty degeneration of the gland cells and deposit of fat in the pancreas, the result of alcoholism or of general adiposity, may lead to want of support of the blood vessels which are no longer able to withstand the blood pressure. This may account for hæmorrhagic pancreatitis so often occurring in fat and flabby individuals. I show on the screen a case of fatty pancreas from the Hunterian Museum.

4. Fat necrosis in the gland or its vicinity has been suggested by Balser who related several cases in support of his views.

5. Disintegration of neoplasms, such as cancer or sarcoma, may be the cause of extensive hæmorrhage.

6. Hæmorrhage from embolism of a pancreatic artery is reported by Mollière.

7. Other causes, such as heart disease, lung disease, cirrhosis of liver, hæmorrhagic diathesis, scurvy, purpura, the exanthemata, phosphorous poisoning, &c., may all give rise to pancreatic hæmorrhage.

8. Pancreatitis may undoubtedly lead to hæmorrhage and in considering acute pancreatitis I shall refer to it again, but it seems highly probable that an effusion of blood into the pancreas from one of the before-mentioned causes should more frequently be the cause rather than the effect of pancreatitis owing to disruption of the secreting tissue, escape of the proper secretion of the gland, fat necrosis, and invasion of the effusion by organisms either through the ducts or in some other way. Large pancreatic hæmorrhages are of great interest clinically and are probably more common than is usually thought; they may occur into the substance of the gland and disintegrate it, or on to the surface and lead to extensive effusion either beneath the peritoneum or into the lesser sac, as in the case which I have related.

Symptoms.—A great variety of symptoms may occur, from mere attacks of colic in the epigastric region, soon passing off, to violent and persistent pain followed by collapse and rapid death within a short time, or if recovery from the first seizure should occur the attacks may be repeated and ultimately symptoms of acute pancreatitis may supervene. The site of the pain may be præcordial or dorsal but it is usually epigastric and is often accompanied by vomiting. The abdomen soon becomes distended and tympanitic and if inflammation occurs fever of an irregular type may supervene, or if the disease assumes a rapid ultra-acute form the temperature may be subnormal throughout. At first the diagnosis will be obscure but with the onset of pancreatitis some of the symptoms which I have related will be found and an examination of the urine for the pancreatic reaction will afford valuable help.

Treatment.—In the very acute cases, where death rapidly occurs, even if the diagnosis could be made specific treatment would probably be useless, but if the diagnosis could be effected before a fatal result had occurred abdominal section and gauze packing would seem to be indicated. In the later stages the treatment is that of acute pancreatitis and in this case a diagnosis can be made both from the symptoms and physical signs as well as from the discovery of the pancreatic reaction in the urine.

ST. BARTHOLOMEW'S HOSPITAL REBUILDING SCHEME.—The March issue of the *St. Bartholomew's Hospital Journal* prints a list of old St. Bartholomew's men who have intimated their willingness to act as local secretaries for the purpose of raising a sum of money towards the rebuilding scheme. It is suggested that it would be appropriate if a new pathological department could be provided by the exertions of past and present students of the hospital and with this object a subscription list will be published monthly in the *St. Bartholomew's Hospital Journal*.

The Arris and Gale Lecture

ON

THE CHEMISTRY OF THE URINE IN DISEASES OF THE PANCREAS.[1]

Delivered before the Royal College of Surgeons of England on March 14th, 1904.

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MR. PRESIDENT AND GENTLEMEN,—Since 1889, when von Mering and Minkowski first clearly demonstrated the relationship of the pancreas to diabetes, many important additions have been made to our knowledge concerning the functions of the gland. While, on the one hand, the experiments of Pawlow, Bayliss and Starling, and others have shown how much more complicated than had formerly been supposed are the influences which bring about the due performance of its part in digestion, the researches of Laguesse, Ssobolew, Schulze, Opie, and other workers have increased our information as to the means through which it controls the assimilation of carbohydrate material by the tissues. From being considered as merely an accessory to the digestive tract the pancreas has now come to be regarded as an organ having a most important influence on the metabolism of the body and there has accumulated a considerable mass of evidence tending to show that the part which it plays in completing the process of digestion is probably the least important of its functions. When from any cause the flow of the pancreatic juice into the duodenum is interfered with no serious disturbance of digestion necessarily follows, since its work may be performed by other agencies, but it is otherwise with the internal secretion of the gland, for, so far as we know at present, there is no other organ capable of playing the part which the pancreas does in controlling carbohydrate metabolism. One would expect, therefore, that disease of the pancreas would be accompanied by evidence of a disturbed relationship in the internal chemistry of the body, and although experiment has shown that almost complete ablation of the gland is necessary in animals before the symptoms of diabetes supervene, it is probable that in all cases where inflammation or some other pathological state interferes with its functions, a condition tending towards glycosuria is produced.

While our knowledge of the physiology and pathology of the pancreas has thus rapidly increased little or no corresponding advance has been made in the clinical diagnosis of the affections to which it is liable. Inflammatory changes, malignant disease, even cysts and calculi, offer no pathognomonic signs by which they can with certainty be recognised, and Opie in his recent monograph writes: "Disease of the pancreas is rarely recognised during life." A correct opinion may be formed no doubt in a few instances, generally by a process of exclusion, but in the majority of cases the true state of things is only learned on the operating table or in the post-mortem room. That this should be so is neither creditable to the art of medicine nor just to our patients. Disease of the pancreas is now known to be by no means rare and there is no doubt that in the past many a life has been sacrificed which could have been saved had but the nature of the disease been recognised in time and suitable treatment adopted. The difficulty in diagnosis arises chiefly from the obscurity and indefiniteness of the symptoms. Masked as they frequently are by the more salient evidences of perverted function in neighbouring organs and leading to wrong conclusions by their similarity to those of better known affections it is not surprising that disease of the pancreas is perhaps more frequently overlooked than any other serious abdominal trouble.

Not only is there a difficulty in recognising pancreatic affections during life but, as Mr. A. W. Mayo Robson was the first to point out in his lecture at the London Polyclinic in July, 1900, the symptoms of cancer of the pancreas are often

[1] The purely chemical aspect of this subject will be dealt with on another occasion.—P. J. C.

so closely simulated by those of chronic pancreatitis, and the condition of the gland found at operation is so much alike in the two conditions, that it is only the after-history of the case and its response to suitable treatment that allow of their accurate differentiation. That this is a matter of the utmost importance is apparent when it is remembered that whereas operation in cancer of the pancreas is inadvisable, and whenever possible to be avoided, most satisfactory results usually follow appropriate treatment in cases of chronic inflammation. The difficulty is, however, to decide which are the cases that will benefit by operation and which are those where interference will only hasten an inevitably fatal conclusion. Hitherto there have been no satisfactory means by which this question could be decisively answered and it was mainly in the hope of finding a solution of the difficulty that some three years ago I commenced, in conjunction with Mr. Mayo Robson, an investigation of the chemical changes in the body produced by pancreatic diseases. These researches are not as yet by any means complete, for as the investigation has progressed many new and interesting issues have been raised, but, as I hereafter hope to show, the original object with which the experiments were commenced has, we believe, been gained and, not only so, but we have reason to think that the whole question of the diagnosis of diseases of the pancreas has been placed on a much more satisfactory footing than heretofore.

In this lecture I shall as far as possible confine my remarks to a consideration of the practical application of our observations to clinical medicine and more especially to their bearing on the diagnosis of diseases of the pancreas and the differentiation of the various affections to which this organ is liable. It will, however, be necessary for me in the first place briefly to indicate the lines on which the research was commenced and to state the theoretical considerations that formed the original basis of the work.

On carefully considering the symptoms that may be associated with the various forms of inflammation of the pancreas one is struck by the fact that a number of the more typical of them are obviously dependent on alterations in the chemistry of the body. Among such may be mentioned the tendency to hæmorrhage, apart from the presence of jaundice, the occurrence of fat necrosis, the discovery of undigested fat and muscle fibre in the stools, the appearance of sugar in the urine, and the marked wasting seen in many cases. The association of these symptoms in acute cases and the frequent occurrence of several of them in the subacute and chronic inflammations suggest that the chemical changes that give rise to them are directly or indirectly dependent on perversion of the pancreatic functions. The most characteristic and striking of the signs I have mentioned is undoubtedly fat necrosis, and whatever view of its ultimate causation is held there can be no doubt that it is almost invariably associated with obvious disease of the pancreas. Although it is most typically met with in acute and gangrenous pancreatitis, it is not improbable that similar but less evident changes accompany all forms of pancreatic inflammation, and it is to these changes that the hæmorrhagic tendency which is so characteristic of the affections is due. It is now admitted by most authorities that the masses of free fatty acids or the combination of them with lime, which constitute the lesion, are directly derived from the fat of the affected part by the fermentative action of the pancreatic secretion and that the other constituent of the fat molecule—namely, the glycerine—is absorbed into the circulation. Bearing in mind the effects produced in animals by the subcutaneous injection of glycerine it occurred to us that in man the continued action of minute doses, such as fat necrosis would give rise to, might produce such a blood state as is met with in pancreatitis, especially when to the action of the glycerine on the blood there are added the effects of the removal of calcium salts from the circulation.

Starting on the theory that there was some such connexion between fat necrosis and the hæmorrhagic tendency we commenced our investigations of the chemical pathology of pancreatitis by examining the blood of several cases for glycerine and glycerine derivatives. But, as we quickly realised that such direct proof was impossible, owing to the small amounts of blood available at the bedside and to the relatively minute quantity of glycerine likely to be present in it, we turned our attention to the urine in the hope of there finding indirect evidence in support of our hypothesis. The well-known selective power of the kidneys by which they detect and excrete abnormal constituents of the blood favoured the view that the soluble products of fat necrosis, or their derivatives, might cause changes in the composition of the urine which, owing to the large bulk of material easily available for examination, could be satisfactorily detected. Further, although glycerine when introduced into the circulation is stated to be oxidised and to increase the secretion of carbon dioxide, Catillon has demonstrated it in considerable quantity in the urine after administration by the mouth and from 50 to 60 per cent. of the quantity given has been shown to be excreted thus in dogs. Even a larger percentage than this might reasonably be expected to escape destruction in patients suffering from pancreatic affections, for in them the metabolic processes are abnormal and there is apparently a tendency to defective oxidation.

Lewin has suggested a method for detecting glycerine in the urine which depends upon the fact that oxalic acid breaks up in the presence of glycerine into formic and carbonic acids. On distilling a sample of urine from a case of pancreatitis in the way he describes, indications of the presence of a formate in the distillate were obtained which, although not very marked, were still sufficiently pronounced to encourage further investigation. Several other methods for detecting the presence of glycerine were afterwards employed, and among them was that which depends on the formation of glycerose when a solution of glycerine is heated with nitric acid. In carrying out this test we employed phenylhydrazin as the means for detecting the glycerose, and were struck by the exceedingly well-marked deposit of crystals given by pancreatic urines. Control experiments carried out with normal urines and with specimens from cases of catarrhal and obstructive jaundice, intestinal obstructions, gastric ulcer, &c., were found to be uniformly negative, so that we hoped that we had not only obtained evidence in support of our theory but also had succeeded in finding a method of distinguishing pancreatitis from at least some of the clinical conditions with which it is liable to be confused. A more extended experience showed, however, that the matter was not quite as simple as it at first sight had appeared, for although all pancreatic urines gave a reaction, a similar result was obtained in a certain number of other diseases in which there was no reason to believe that the pancreas was diseased but which were characterised by rapid tissue change and defective oxidation. It had also to be borne in mind that the reducing power of most urines is increased by boiling with mineral acids, and although it was found that either hydrochloric or sulphuric acid could be substituted for the nitric acid originally employed, a series of careful experiments carried out for the purpose failed to demonstrate that the reaction obtained in pancreatic urines was due to the so-called animal gum from which the reducing substance of normal urine is said to arise. As the success of the test appeared to depend on the presence of some abnormal constituent in the urine, the examination of a large number of specimens from cases of known or suspected pancreatic disease was next undertaken and it was found that when taken in conjunction with the clinical symptoms the reaction was of considerable assistance in diagnosis. The strength of the acid employed, the kind of acid used, the time of boiling, and other details of the experiment appeared, however, to exert considerable influence on the result, and as a consequence of numerous experiments a method of procedure was finally evolved which proved to be generally satisfactory. This I shall now describe and call, for convenience of reference, reaction "A."

The specimen of urine to be examined is filtered, and ten cubic centimetres of the filtrate are poured into a small flask. One cubic centimetre of strong hydrochloric acid is added and a funnel having been placed in the neck to act as a condenser the flask is placed on a sand bath and gently boiled for ten minutes after the first sign of ebullition is detected. A mixture of five cubic centimetres of the filtered urine and five cubic centimetres of distilled water is then poured into the flask, which is afterwards cooled in running water. The excess of acid is now neutralised by slowly adding four grammes of lead carbonate and, after standing for a few minutes to allow of the completion of the reaction, the urine is filtered through a moistened filter paper and the flask is washed out with five cubic centimetres of distilled water on to the filter. To the clear filtrate are now added two grammes of powdered sodium acetate and 0·75 gramme of phenylhydrazin hydrochlorate and the mixture is boiled for from three to four minutes on the sand bath. The hot fluid is then poured into a test tube and allowed to cool undisturbed. After the lapse of a period, varying with the severity of the case from one to 24 hours, a more or less abundant flocculent yellow deposit is found at the bottom of the tube, and this when examined

under the microscope with a ½-inch objective is seen to consist of sheaves and rosettes of golden yellow crystals. As the presence of sugar in the urine would obviously vitiate the results thus obtained it is necessary before proceeding to the test to make sure that the untreated urine does not give a reaction with phenylhydrazin. This may roughly be done with Fehling's solution, or some similar test, but it is better to carry out a control experiment with phenylhydrazin hydrochlorate and sodium acetate in the manner I have just described, omitting the preliminary boiling with hydrochloric acid. Should the control experiment reveal even a trace of sugar it must be removed by fermentation, with subsequent boiling to expel the alcohol formed, before the investigation is proceeded with. The presence of albumin in the urine is also liable to cause trouble, and it is best got rid of either by treatment with ammonium sulphate or by acidifying with acetic acid, heating, and filtering.

The results obtained by this method were found not to be absolutely trustworthy, although a useful aid in diagnosis, since a positive reaction was also obtained in patients suffering from certain other diseases where active tissue change was taking place, such as cancer, adenitis, pneumonia, &c. For a long time the positive reaction given by these non-pancreatic cases diminished the practical usefulness of the test but eventually a means by which the cases of pancreatitis might be distinguished was devised, and we now believe that by combining the results of the two it is possible in the large majority of cases to make a trustworthy diagnosis from the examination of the urine alone. The differentiating test depends upon the fact that the formation of the crystals described in reaction "A" is interfered with in inflammation of the pancreas by a preliminary treatment of the urine with perchloride of mercury, while such treatment does not affect the appearance of the crystals in cases of cancer of the pancreas and the other conditions which give rise to a positive reaction. The procedure, which I shall refer to as the "B" reaction, is as follows.

20 cubic centimetres of the filtered urine are thoroughly mixed with half its bulk of a saturated solution of perchloride of mercury. After standing for a few minutes it is carefully filtered and to ten cubic centimetres of the filtrate one cubic centimetre of strong hydrochloric acid is added. The mixture is then boiled for ten minutes on a sand bath and subsequently diluted with five cubic centimetres of the filtrate from the mixed urine and perchloride of mercury solution and ten cubic centimetres of distilled water. After cooling it is neutralised with four grammes of lead carbonate and the succeeding stages of the operation are carried out as in reaction "A."

Experiments were next set on foot with a view to still further differentiating the various forms of disease to which the pancreas is liable, especially chronic inflammation and malignant disease, for, as I have already mentioned, the accurate diagnosis of these two conditions is a matter of the utmost importance to the patient. Careful observation of the crystals isolated from the urines of various types of pancreatic disease showed that while there was a general resemblance variations in form occurred. On classifying the crystals from a considerable number of cases it was found that those obtained in malignant disease were as a rule coarser and broader than those seen in simple inflammation and that in the simple inflammations again the crystals from acute cases were on the whole somewhat finer than those seen in most instances of chronic inflammation. The lines dividing these types were not hard and fast, however, and although to the experienced eye a suggestive difference was discernible, great reliance could not be placed on a differential diagnosis based on the microscopical characters of the crystals alone. In the course of our further investigations a character of much greater value was discovered, and this was the differing rate of solubility of the crystals in dilute sulphuric acid. It was at first thought that this difference depended on the varying size of the crystals, but more extended experience proved that this was not the case; for although the coarser crystals took, as a rule, longer to dissolve completely than the finer ones, exceptions were met with and the time of solution appeared to be directly dependent on the intensity of the inflammatory changes in the gland. If the crystals obtained in reaction "A" be observed under the microscope whilst a 1 in 3 dilution of strong sulphuric acid is being irrigated under the cover-glass, they will be seen to turn brown when the acid reaches them and then to dissolve. In acute pancreatitis the interval that elapses between the first appearance of the brown colour and the complete solution of the crystals under observation varies from a few seconds to half or three-quarters of a minute; in chronic pancreatitis it extends from half to one and a half or rarely to two minutes, while the crystals of malignant disease as a rule do not completely disappear for from three to five minutes. To form a trustworthy opinion it is advisable to take the mean of several observations, so that slight variations unavoidably present in the conditions of the experiment may be neutralised and comparable results obtained. The crystals met with in non-pancreatic cases turn brown and dissolve in dilute sulphuric acid in a similar way to those obtained in pancreatic affections, and they most closely resemble those of chronic pancreatitis in their time of solution which generally ranges round one minute. Phenylglucosazone crystals, with the strength of acid mentioned, only slowly assume the brown colouration and take five minutes or more to dissolve.

The time limits mentioned are the result of the comparison of a large number of observations and will as a rule be found to be correct. The exceptions, which are in most instances cases of malignant disease of the pancreas, I shall consider in detail when dealing with the examinations which I have made of specimens from cancer cases. The practical results of the examination of the urine by the methods which I have described may be briefly summarised as follows: 1. If no crystals are found by either the "A" or the "B" method the pancreas is not at fault and some other explanation of the symptoms must be sought. 2. If crystals are obtained by the "A" method but not by the "B" reaction active inflammation of the pancreas is present and surgical interference is generally indicated. (*a*) The crystals obtained by the "A" method will in acute inflammation dissolve in 33 per cent. sulphuric acid in about half a minute. (*b*) In chronic inflammation the crystals obtained by the "A" method will take one or two minutes to disappear. 3. If crystals are found in preparations made by both the "A" and the "B" methods there may be—(*a*) malignant disease of the pancreas, when the crystals will as a rule take from three to five minutes to dissolve and operation is inadvisable; (*b*) a damaged pancreas due to past pancreatitis, when the crystals will dissolve in from one to two minutes; (*c*) some disease not connected with the pancreas, when the crystals dissolve in about one minute. In the two latter, (*b*) and (*c*), the urgency of the symptoms and the condition of the patient must decide the need for an exploratory incision, but there is generally not much difficulty in referring the case to one or other of the groups when the clinical history is considered in conjunction with the result of the examination of the urine.

Other aspects of the examination of the urine in diseases of the pancreas may now be mentioned. The most important of these from a diagnostic point of view is the microscopical investigation of the centrifugalised deposit. This in nearly 30 per cent. of the specimens from cases of pancreatic inflammation that I have examined has shown calcium oxalate crystals and if those urines in which bile was present be excluded the proportion is more than doubled. The significance of oxalate of lime crystals has long been debated, but the marked tendency to increased oxalate excretion in diabetes and its frequent rise simultaneously with a decrease in the output of sugar have suggested that it is associated with the incomplete oxidation of carbohydrates. The remarkably frequent occurrence of these crystals in pancreatitis lends support to this view, for it is only in the comparatively early stages of the lesion that they are found; and when, as sometimes occurs, the disease progresses and glycosuria occurs the formation of calcium oxalate appears to cease. Further, their presence seems to indicate that a stage antecedent to diabetes and closely related to it is reached in most cases of pancreatic inflammation, whether they ultimately develop into the typical condition or not. Dextrose has only been met with in a very few of the urines examined and in all instances where it has been detected the case has been either one of acute inflammation or advanced cirrhosis of the pancreas. The ordinary forms of infective subacute and chronic inflammation do not appear to give rise to dextrosuria in the stages where they come under the observation of the surgeon. As Kulz and Vogel have detected a pentose in the urine in diabetes and Hammarsten has demonstrated a similar substance in a nucleo-proteid obtained from the pancreas, the possibility of pentoses being present in the urine in pancreatitis had to be borne in mind, but I have been unable experimentally to

verify the fact. Acetone and di-acetic acid were also sought for in a considerable number of cases, but no evidence of their presence could be found except in a few instances of advanced pancreatitis with typical diabetes.

In view of the fact that inflammation of the pancreas is in a considerable number of cases associated with more or less jaundice it is not surprising to find that bile pigments were discovered in 60 per cent. of the urines examined. In some only a faint trace was detected with difficulty, while in others there was a very large quantity. All the specimens but one, derived from cases of malignant disease of the pancreas, showed a considerable amount of bile in the urine. No special significance can be attached to the quantity present, as in many cases with chronic catarrh the urine is as deeply coloured as it is in most cases of malignant disease. The removal of any obstruction of the common duct that may exist is generally followed very shortly by the disappearance of bile from the urine, but in a few cases where the condition is of long standing bile pigments may be found, although in much diminished quantity, several weeks or even months after the operation.

In the course of our observations over 300 specimens of urine have been investigated, but of these about 100 were only employed as controls. The remainder may be divided into an earlier series on which the preliminary investigations were carried out, and a succeeding series of 170 specimens derived from 111 cases of suspected pancreatic disease where the diagnostic value of the methods described was put to the test. As I have already sketched the lines along which the investigation proceeded it will not be necessary to refer further to the first series, except to state that all the cases were under Mr. Mayo Robson's care and had been found at operation to be suffering from some disease of the pancreas.

In the second series specimens of urine were sent to the laboratory for examination without any indication as to the nature of the report expected and in many of the earlier ones the condition of the pancreas was ascertained while the examination was being made. By thus separating the clinical and experimental investigations any unconscious bias on the part of the surgeon or the pathologist was avoided and a true estimate of the reliability of the tests was formed. Among the earliest cases dealt with in this way I may mention two which were examined on the same day. Both were deeply jaundiced and presented very similar clinical symptoms, but on the operating table one was found to have well-marked pancreatitis with a stone in the ampulla of Vater, while in the other no enlargement or hardening of the pancreas could be detected although some gall-stones were found in the gall-bladder. The results of the examination of the urines entirely agreed with the conditions found, for while with the sample from the first case a well-marked reaction was obtained, no crystals of any sort could be isolated from the urine of the second. Similar encouraging confirmations of the value of the tests were met with in many other cases, but it will facilitate matters if I consider the whole series in groups arranged according to the lesion present, only referring to individual cases where they illustrate some special point or contain elements of particular interest.

GROUP 1.—ACUTE PANCREATITIS.

The urine from three cases of acute pancreatitis has been investigated. All were under Mr. Mayo Robson's care and two of them were operated on by him. In the third death occurred shortly after the patient was first seen and as unfortunately no post-mortem examination was permitted the diagnosis is not absolutely certain but clinically the case was a typical one of acute pancreatitis. In the two cases operated on one was found to have pancreatitis with fat necrosis, while in the other a slough of the pancreas was removed and a stone was found in the common duct. A typical reaction was obtained in all three when the urine was examined, the crystals obtained by the "A" method dissolving in a quarter to three-quarters of a minute. An interesting fact was observed in connexion with one of the cases (that showing fat necrosis)—namely, that a month after operation, when the patient was convalescent, the crystals which were obtained from the urine, but now in much reduced numbers, took from one minute to one and a half minutes to dissolve instead of the three-quarters of a minute noted before and shortly after the operation.

GROUP 2.—CHRONIC PANCREATITIS.

Chronic pancreatitis is an inflammatory process due in the greater number of cases to an infection travelling up the pancreatic ducts. The infection may originate in a catarrh of the duodenum or may result from stagnation of the bile and pancreatic secretion as a consequence of partial or complete blocking of their common channel of entry into the intestine. When an obstruction occurs it is in most instances due to a gall-stone lodging in the pancreatic portion of the common duct or in the ampulla of Vater. In 30 of the 51 cases in this group a biliary calculus was found in one or other of these situations. The urine in all cases yielded typical crystals dissolving in dilute sulphuric acid in about one minute, although in three instances they completely disappeared in half a minute and in four others one and a half minutes elapsed before solution was complete. Crystals dissolving in three-quarters of a minute were obtained in two cases where pancreatic calculi were the cause of the obstruction. An account of the first case was published by Mr. B. G. A. Moynihan in THE LANCET of August 9th, 1902, p. 355, while the other has been described in detail by Mr. Mayo Robson in his recent Hunterian lectures. Obstruction from causes other than calculi are occasionally met with, and in one, where a malignant growth of the ampulla of Vater blocked the entrance of the common duct into the duodenum, crowds of fine crystals dissolving in from half to three-quarters of a minute were obtained from the urine; in another, where a fold over the mouth of the papilla and a much dilated common duct were discovered at operation, the urine yielded crystals dissolving in from one minute to one and a half minutes. Sometimes the inflammation of the pancreas goes on to suppuration and either a localised abscess is formed or the duct is found to be filled with pus. Two examples of each of these conditions have been met with and all gave a typical pancreatic reaction. The most recent was a striking illustration of the difficulties attending an accurate diagnosis in pancreatic affections and also shows how a chemical examination of the urine may throw light on a difficult case. The patient, a man, aged 65 years, was deeply jaundiced and much emaciated, a swelling could be felt in the region of the pancreas, and the general condition suggested malignant disease although a varying temperature indicated septic absorption. A sample of the urine sent to me for examination by Dr. Hector W. G. Mackenzie yielded by the "A" method many crystals soluble in one minute, while with the "B" reaction only amorphous granules were obtained. I accordingly diagnosed inflammation of the pancreas and the sequel proved the correctness of the diagnosis, for when the abdomen was opened a stone was found in the ampulla of Vater and on removing this pus oozed out of the duct of Wirsung. Mr. Mayo Robson, who performed the operation, also found that the pancreas was very much enlarged. Further cases in this group might be mentioned where the chemical diagnosis proved of considerable assistance but I will only refer to one. This was that of a man who had for some time been steadily losing flesh and in the three months before he was seen in consultation by Mr. Mayo Robson was said to have lost over two stones in weight. For two months he had been deeply jaundiced and physical examination showed enlargement of the liver and spleen and some swelling over the pancreas. The gall-bladder was also dilated and altogether the case was strongly suggestive of cancer of the pancreas. His urine, however, gave crystals dissolving in one minute by the "A" method, while the "B" reaction was negative. At the operation which was subsequently performed chronic pancreatitis with a stone in the common duct was found and the diagnosis based on the urinary examination thus proved to be correct.

In 17 other cases where the reaction was obtained the pancreas was more or less enlarged but no obvious obstruction of the ducts was discovered at the time of operation. In six of them bile pigments were found in the urine, so that the inflammatory process would appear to have travelled up the bile and pancreatic ducts either as a direct extension of a catarrh of the duodenum or as the result of an obstruction of the common duct which had passed away.

GROUP 3.—MALIGNANT DISEASE OF THE PANCREAS.

The diagnosis of malignant disease of the pancreas from the examination of the urine depends chiefly on the appearance of the crystals and the time of solution of those obtained by the "A" reaction in dilute sulphuric acid, for like non-pancreatic cases they give a reaction by both the "A" and the "B" methods. Out of the 15 cases of cancer examined a correct diagnosis was made in 13. In one,

although the coarseness of the crystals raised a suspicion of malignant disease, only a doubtful opinion was given as complete solution was effected in one or two minutes. In the other case a diagnosis of chronic inflammation of the pancreas was incorrectly made since the urine yielded fairly fine crystals dissolving in from one minute to one and a half minutes by the "A" reaction and the "B" reaction gave only a few crystals. In four of the instances where the opinion given was confirmed typical coarse crystals dissolving in from four to five minutes were obtained, while in the other 11 from three to four minutes elapsed from the first brown colouration of the crystals to their complete disappearance. In the majority, therefore, of these cases the examination of the urine was of considerable assistance in solving a difficult problem, but in a small proportion the result was not so satisfactory. The explanation of the difference in time of solution met with in various cases of malignant disease was not at first apparent, but the results of the examination of two specimens from a case of cancer of the pancreas in March of last year suggested that it was probably associated with the amount of inflammatory reaction set up and the situation and extent of the growth. The first specimen referred to, examined on March 27th, showed coarse crystals soluble in from three to four minutes, while the second, taken a week later, yielded crowds of fine crystals dissolving in under half a minute—that is to say, the latter approximated in appearance and solubility to those met with in acute pancreatitis, whereas the former were typical of malignant disease. In a communication accompanying the second sample it was stated that the condition of the patient had markedly changed since the last examination, and as he very shortly afterwards succumbed it appeared probable that the alterations noticed in the urine and in the clinical condition were associated with a rapid extension of the growth. Two cases under the care of Dr. J. Stewart of Leeds lend support to this view. In one, where coarse crystals dissolving in about four minutes were obtained, the disease affected the body of the gland but did not encroach on the duct; in the other the growth was confined to the head of the pancreas and the presence of fairly fine crystals dissolving in from one minute to one and a half minutes led, as I have already mentioned, to an incorrect diagnosis of chronic pancreatitis. Clinically also this last case was of interest as I hear from Dr. Stewart that careful palpation failed to reveal the distension of the gall bladder that usually accompanies malignant disease of the head of the pancreas. The explanation was found at the post-mortem examination when no trace of a gall-bladder could be discovered.

The correct diagnosis of malignant disease from an examination of the urine requires considerable care, for although the typical, broad, slowly dissolving crystals are met with in most instances, in a few cases the presence of an attendant pancreatic inflammation is liable to obscure the issue and to lead to an incorrect opinion. The mistake of diagnosing inflammation for cancer can be avoided by carefully noting the result of the "B" reaction and the difficulty now is to differentiate it as a rule from some non-pancreatic affection. In all cases of suspected malignant disease of the pancreas it is advisable to investigate the fæces as well as the urine, for the presence of undigested muscle fibre, the absence of bile pigments, and a large amount of fat in the stools are strongly in favour of cancer.

GROUP 4.—CYST OF THE PANCREAS.

The urines from two cases of cyst of the pancreas have been examined and both gave results similar to those met with in chronic pancreatitis. The crystals obtained by the "A" method were fairly fine and dissolved in about one minute.

GROUP 5.—CASES WITH GLYCOSURIA.

Considering the effect produced in the lower animals by removal of the pancreas the relative infrequency of glycosuria as a symptom of pancreatitis is somewhat remarkable. In chronic pancreatitis sugar is rarely met with, while even in acute destructive lesions glycosuria is rather the exception than the rule. In the 90 cases of proved pancreatic disease investigated sugar has only been found in the urine of five and these were all examples of advanced chronic inflammation. In neither the urines of the 15 cases of malignant disease nor in the samples from the three acute cases was any reducing substance met with. The relation of the fibrous tissue of chronic pancreatitis to the islands of Langerhans is, according to Opie, the determining factor, and whereas in the interlobular variety diabetes only supervenes when the sclerotic process has advanced to a late stage and the interacinar islands are destroyed along with the secreting tissue, in the interacinar form diabetes is an early symptom as the islands of Langerhans are more or less involved from the commencement. Since obstruction of the pancreatic duct gives rise to interlobular pancreatitis and obstruction is the most common cause of inflammation, glycosuria is relatively uncommon in chronic pancreatitis.

The methods adopted for the examination of the urine when sugar is present have already been described and, although our experience of them is not as yet large, the results obtained lead us to hope that they will prove of assistance in differentiating pancreatic from non-pancreatic diabetes. In one of the five cases mentioned the pancreatic origin of the disease was proved post mortem and histological examination of the gland showed that the fibrous tissue of which it was mainly composed had destroyed practically the whole of the glandular structure. Only a few isolated patches of pancreatic tissue could be seen and in these no trace of the islands of Langerhans was detected. The specimen of urine that I examined was taken in the post-mortem room by Dr. C. Powell White from the bladder of the patient who was killed in an accident near St. Thomas's Hospital. It contained a large amount of dextrose and after this had been removed showed by the "A" method many fine crystals soluble in half a minute. The "B" reaction gave only an amorphous deposit of granules. Similar results were obtained with a sample of urine kindly secured for me by Mr. J. Tait from a case of acute pancreatitis described by Mr. W. Gifford Nash in THE LANCET of Nov. 1st, 1902, p. 1192. My examination was made over a year after the first onset of the symptoms but the urine still contained a considerable amount of sugar, and crystals dissolving in from a quarter to half a minute were prepared by the "A" method. A second specimen, kindly sent to me by Mr. Nash in February of this year, showed dextrose but no acetone or di-acetic acid. A well-marked pancreatic action was given by the "A" method, the crystals dissolving in from half to three-quarters of a minute, but no precipitate of any sort was found in a preparation made by the "B" method. These results indicate, I think, that although the operation had been successful in relieving the acute condition a subacute or chronic pancreatitis still remained.

That an inflammation of the pancreas may occasionally progress in spite of the removal of the initial obstruction of the duct which gave rise to it is also shown by two cases operated on by Mr. Mayo Robson some years ago and samples of whose urine I have recently had the opportunity of examining. In one the condition of the pancreas found at the time of the operation was such that malignant disease was diagnosed and a bad prognosis was given. The patient is still alive and apparently well, however, eight and a half years after the operation. Her urine which I examined in February showed an abundance of dextrose but no acetone or di-acetic acid. Crystals dissolving in three-quarters of a minute were obtained by the "A" method but none could be isolated by the "B" method. The second case was operated on in 1898 and a sample of the urine examined recently gave similar results to those just mentioned. In this case, too, a swelling of the head of the pancreas, thought at the time to be malignant, was found at the operation, but the rapid increase of weight and subsequent good health of the patient showed that the tumour was really inflammatory. The remaining case of the five in this group was that of a man who had suffered for some years from what appeared to have been gall-stone colic. His urine contained sugar and yielded crystals by the "A" method which dissolved in half a minute.

GROUP 6.—CASES WITH SYMPTOMS RESEMBLING THOSE OF PANCREATITIS.

In 35 cases the clinical symptoms suggested for a time the presence of an inflammation of the pancreas but their subsequent course and the conditions found on operation confirmed the diagnosis based on the examination of the urine that the pancreas was not affected. Seven of them turned out to be cases of obstructive or catarrhal jaundice. One of the former was particularly instructive as it had been diagnosed by a well-known London physician as being a case of cancer of the pancreas and was regarded by him as hopeless. The result of the examination of a specimen of urine sent to me for an opinion did not agree with this view, however, as I failed to

obtain any crystals by either the "A" or the "B" methods. I consequently ventured to suggest that the pancreas was not diseased at all. Mr. Mayo Robson shortly afterwards operated on the patient and found that the pancreas was perfectly normal but that there was a large biliary calculus lodged in the bile duct above the duodenum and it was from this that the jaundice and other symptoms arose. A perfect recovery followed and the patient is now quite well. Several cases of ulceration of the stomach and duodenum have been differentiated from pancreatic diseases by the absence of the characteristic reaction in the urine. In malignant disease of the stomach the positive results obtained by both the "A" and the "B" method have served to exclude pancreatitis, while the solubility of the crystals in about one minute showed that the symptoms were probably not due to cancer of the pancreas. I have only had the opportunity of examining the urine from one case of intestinal obstruction, but as this did not give the pancreatic reaction it is most likely that acute pancreatitis may be diagnosed from it by this means in spite of the similarity of their clinical phenomena. In most cases of malignant disease of the intestine crystals dissolving in one minute or thereabouts have been obtained from the urine, but in one case of cancer of the rectum none could be found.

GROUP 7.—RE-EXAMINATION OF OLD CASES.

When a patient with pancreatitis is operated on the symptoms are relieved and he is generally restored to apparent health, but the cases of glycosuria I have quoted as occurring some years subsequently to surgical treatment show that in some at least there is a permanent disturbance of metabolism which may ultimately develop into diabetes. Such a progressive lesion is not common, but the examination of the urine in a considerable number of cases during convalescence and at varying intervals afterwards has indicated that in most there is a permanent alteration in the chemical equilibrium of the body. While for all practical purposes the work of the pancreas may be efficiently carried out, the damage it has sustained would appear to interfere with an absolutely normal performance of its functions and it is probable that the oxidation of carbohydrate material is imperfect in all cases of healed pancreatitis. So long as there is any active inflammation of the gland the "B" reaction is negative, but when the active stage is passed both the "A" and the "B" methods are found to yield crystals. In many cases where the urine has been examined at intervals for several months after operation an abundant crop, dissolving in about one minute, has been obtained, and in two cases where the urine was re-examined two and a half years after recovery a well-marked reaction was given by both methods. I have recently had sent to me samples from several cases on which Mr. Mayo Robson operated for pancreatitis as long as six years ago, and these all gave similar results. In about half the recovered cases also calcium oxalate crystals have been found in the urine and in several cases of pancreatitis with jaundice it has been noticed that they have made their appearance when the icterus was relieved by drainage of the biliary passages.

I have not attempted to deal with the cases examined individually, as most of them have been under Mr. Mayo Robson's care and are either described in the last edition of his book on Diseases of the Gall-bladder or have been dealt with by him in his Hunterian lectures. In THE LANCET of Sept. 27th, 1902, p. 856, Mr. Moynihan has recorded several instances of chronic inflammation of the pancreas, samples of the urine from which I had examined and I take this opportunity of thanking him and a number of other surgeons and practitioners in various parts of the country who have interested themselves in these investigations and have materially assisted the work by supplying specimens from cases under their charge.

It is unfortunate, from the point of view of our researches, that it has not been possible to obtain much evidence as to the histological condition of the pancreas that accompanies the changes in the urine described. Of the three cases where a post-mortem examination was allowed one was a spheroidal-celled carcinoma and has already been referred to; the other two were examples of an early and advanced stage of chronic pancreatitis respectively. Microscopical examination of the gland from the former case showed engorgement of the blood-vessels, cloudy swelling of the parenchyma, and in places some excess of fibrous tissue, while in the latter an advanced condition of fibrosis was found.

In spite of the paucity of post-mortem evidence in support of the diagnostic value of the methods of urinary examination mentioned there is no doubt that they are clinically useful. We do not claim that they are pathognomonic or that, taken alone, they will enable a correct opinion to be formed in every case, but we do think that when the results of the examination of the urine are considered in conjunction with the clinical symptoms a trustworthy diagnosis is in nearly all cases of pancreatic disease capable of being arrived at. A much more extended experience, dealing with a considerably larger number of cases than it has been possible for us to obtain, will be necessary before their exact value can be finally determined, but so far as our observations go they lead us to think that in future an exploratory operation will not be necessary to determine the presence of a pancreatic lesion and that chronic pancreatitis will no longer be found in the post-mortem room as the cause of death in supposed inoperable cases of "cancer" of the pancreas. The tests are not yet perfect and our excuse for bringing them forward at this stage is a desire to place in the hands of the profession an aid to diagnosis which, however incomplete, has proved in our hands of great assistance in many difficult cases. We can only hope that the experience of others will be equally happy and that an early recognition of disease of the pancreas by an examination of the urine may in some cases prevent suffering and lead to the saving of lives that might otherwise have been sacrificed.

And now, Sir, it only remains for me to thank you and the Council of this College for the honour you have done me in permitting me to deliver this lecture. It is an honour that I deeply appreciate and I can only trust that I have proved worthy of your confidence and of my predecessors in the lectureship.

ACUTE APPENDICITIS: ITS DIAGNOSIS AND THE INDICATIONS FOR OPERATION.[1]

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INTRODUCTORY.

NOTHING is more valuable and nothing can be more misleading in medicine than personal or individual experience. This seeming paradox is perhaps specially applicable to the clinical and therapeutic questions which surround the cæcum, for in this domain each individual physician, surgeon, and general practitioner tends to base his views and methods on his personal experience. One man calls in the knife the moment he scents appendicitis; another holds lingeringly to the dying faith in a stercoral typhlitis and perityphlitis, and each man is prone to continue to act in accordance with the results of a limited personal experience. It is now more than 20 years since the vermiform appendix gained recognition as the main factor in what aforetime was attributed to other causes. The predominance of the appendix in this relationship has been steadily asserted and hundreds of operations have afforded opportunities for the confirming of its position and for a reasonable classification of the morbid changes which affect it. In this connexion it will not be uninteresting to you to know that in the medical statistics of the Edinburgh Royal Infirmary for 1891–92 there are four cases of appendicitis, three of typhlitis, and nine of perityphlitis. In 1894–95 the cases of appendicitis rose to 21, while perityphlitis has two, and typhlitis has disappeared from the list. In 1901–02 both terms have disappeared and appendicitis only is retained. Many writers have formally given the old typhlitis and perityphlitis a place in the classical mythology of medicine and assure us that no one has ever seen or ever will see a simple perforation of the cæcal wall or a perityphlitis not due primarily to the appendix. Some writers are more judicious and recognise a small percentage

[1] The opening paper read at the discussion on this subject before the Edinburgh Medico-Chirurgical Society on Jan. 20th, 1904.

of such cases, some even placing them as high as 5 per cent. Were the statements of the former class to be taken as correct I could claim a unique experience, for in a comparatively small experience I have had four such cases. I have had three cases of acute perityphlitis due to primary lesion at the cæcum; one case at the operation showed marked pericæcal inflammation, while the appendix showed none, and a few days later we had, unfortunately, the opportunity of seeing fæcal ulcers in the cæcum; another fatal case was the result of perforation of one of a number of fæcal ulcers; the third occurred in an old man and proved rapidly fatal without perforation or ulcer; the fourth case, also a fatal one, was of chronic perityphlitic burrowing abscess in which the appendix was not involved and where the diagnosis before I saw the patient was malignant disease. I mention my experience to accentuate one half of the seeming paradox with which I opened—namely, that nothing may be more misleading than the personal experience of any one of us if taken by itself and not brought into relations with the experience of others. Whatever lingering sentiment may cling to the older views the evidence is overwhelming that in something between 95 and 100 per cent. of acute affections at the cæcum the primary seat of grave trouble is the appendix and that were it not for the appendix perityphlitis would be a rare occurrence.

THE DIAGNOSIS OF ACUTE APPENDICITIS.

In approaching this question it is necessary to have a clear conception of the condition we seek to diagnose. I do not, however, propose to dwell in detail upon the varied anatomical changes which are met with in the appendix as a result of morbid action; but there are some points which materially assist us in our efforts at differential diagnosis. It is important to bear in mind in the first place that the appendix varies in length and in calibre, in its position relative to the cæcum, and in the form of its mesentery. Moreover, the meso-appendix also carries its blood-supply. In the second place two morbid conditions may arise in connexion with the appendix—namely, (1) inflammation and (2) necrosis, going on to gangrene. The intensity of the inflammation varies from a catarrh of its mucous membrane to a parietal inflammation involving all its coats or an inflammation accompanied by ulcers which may or may not perforate. Necrosis or gangrene of the entire appendix is sometimes, if not always, determined by a short mesentery which gives the appendix a sickle shape or by some other mechanism which interferes with the blood-supply. Van Cott goes so far as to hold that the primary local condition in appendicitis is a trophic one which makes it a point of least resistance for the action of virulent organisms. The fact that appendicitis is much less frequent in women than in men is probably in part due to there being a second source of blood-supply in women by way of the appendiculo-ovarian ligament. This anatomical point is of important significance, for various conditions at the cæcum or of the appendix itself may impede and even arrest the arterial blood-supply so that necrosis and gangrene readily follow. The two other anatomical points which seem to me of most importance are the calibre and perhaps the length of the appendix or the relation between these and the relation of the lumen of the appendix to the cavity of the cæcum. I do not venture to lay down definite rules but it is by recognising the existence of differences in the directions indicated that we are able to understand how the appendix in certain persons, from its shape, size, position, or curvature, is bound to give trouble to its possessor on the slightest provocation, while in others from birth to death it never indicates its existence, no matter what the gastro-intestinal experience of the individual may have been in other respects.

On this anatomical difference of position and of lumen depends and hangs the question of inflammation. Why does the appendix inflame and not the cæcum? I take from A. O. J. Kelly of Philadelphia the idea, which I apply more generally, that the question is essentially one of drainage. Secretion from the mucous membrane of the appendix or fæcal matter entering from the cæcum and not expelled form an excellent nidus for the growth of the micro-organisms of the intestine, but such conditions do more—they have been shown experimentally to be the very conditions which rapidly exalt the virulence of that otherwise harmless organism, the bacillus coli communis. Kelly, Deaver, and others have shown by a large number of observations that this organism is the most common bacterial agent, although not the only one, in the determination of acute inflammation in the appendix. It is important to realise that the exaltation of virulence of the organism mentioned takes place in other bowel conditions as obstruction, strangulation, and volvulus, but for our present purpose it is still more important to know that it also takes place in diarrhœic conditions and in constipation. The variability in the measure of this exaltation of virulence determines the great differences in the clinical manifestations and in the ultimate issue in individual cases. But this question of drainage requires further consideration and in this connexion I believe that the condition of the mucous membrane of the cæcum as a factor in causing the block is forgotten. We never forget that a duodenal catarrh causes a block of the common bile duct, but at the cæcum we are so taken up with the appendix that we ignore the possibility of the block which determines and keeps up the inflammation being caused by a like condition at its mouth. We must, I think, accept this proposition. The block, however, may be associated with a fæcal concretion in the appendix and this association is frequently present in the fulminating type of appendicitis. Here also we have to be on guard against unwarrantable conclusions. Fæcal concretions are common in the appendix without any trace of irritation but if a fæcal concretion and a catarrh operate together then we have the conditions which may lead to rapid perforation. But even then the issue turns on the virulence of the organism present. I have seen a fæcal mass on a surgeon's finger tip a second or two after he had introduced his hand into the abdominal cavity and yet the patient never showed an anxious symptom after the removal of the perforated appendix. In connexion with this question of fæcal concretion Fowler records a unique case in which gangrene of the appendix was due to a gall-stone entrapped and stuck at its orifice.

Following upon the foregoing considerations the first point which appears to me to call for consideration is the question of "appendicular colic"—is there such a condition and what view do we take of it? The sudden onset of severe abdominal pain, perhaps vomiting, muscular rigidity of the abdominal wall or of the lower right segment of it, and tenderness are known to all of us. Talamon argues that this sudden onset of pain is due to a scybalous concretion formed in the cæcum becoming suddenly engaged at the mouth of the appendix. Fowler denies the occurrence of appendicular colic; Hawkins questions it. Personally I do not see how the manifestations referred to are to be otherwise explained than by a temporary embarrassment to the appendix drainage. We all know that an attack of the kind indicated may come on in the night; that after hot applications and a dose of castor oil or of a saline laxative, the individual may be well enough to be at business that day or the following day. No medical man sees him, for the condition is looked upon as indigestion or colic due to constipation and only requiring domestic skill. We have seen cases where a second and a third recurrence of this experience formed the historical back-ground to a tragedy; we have known it repeated over a period of many years and no tragedy to follow.

This question of appendicular colic lies at the threshold of the diagnosis of appendicitis; from it you easily build up the whole clinical story of acute appendicitis. You pass from the mere mechanical and physical embarrassment of colic to the superadded inflammation, perforation, or necrosis. The symptoms of acute appendicitis are common to various abdominal illnesses—sudden onset of pain which may be of extreme severity, vomiting, tenderness, rigidity, a measure of shock with an accelerated and feeble pulse, and a varying degree of elevation of temperature—so that appendicitis has been mistaken for many things; amongst them are acute indigestion, gastric perforation, internal hernia, renal and hepatic colic, while diaphragmatic pleurisy and croupous pneumonia have been thought to be appendicitis. It would be treating the members of this society with scant respect were I to occupy their time with a reproduction of the points determining the differential diagnosis in all these. There are, however, two phenomena which I venture to deal with—namely, pain and tenderness. With regard to pain I am often impressed by the undue significance attached to the site of pain in abdominal conditions. In acute appendicitis the pain is often referred to the umbilical, epigastric, or other region, or it may be diffused all over the abdomen. When pain is thus referred to regions at a distance from the seat of lesion it frequently misleads. When such

referred pains are associated with surface tenderness in the same regions they still more commonly lead to an error in diagnosis. This surface tenderness or skin hyperæsthesia is a great stumbling-block in abdominal diagnosis, and accuracy of diagnosis need never be expected until we have, by careful and patient examination, learnt to distinguish between it and the true tenderness of the diseased organ. We need not discuss the paths of referred pains, but it is well to remember that the nerves involved often carry with them to their terminal distribution a surface hyperæsthesia. One point where the surface tenderness is common has been engraved with the name of McBurney and proves a trap to the unwary clinician. Surface tenderness must not be confused with deep tenderness. At the outset of an attack the rigidity of the muscles may be a barrier to deep palpation, but with sufficient patience it is usually possible to make out the presence or absence of deep tenderness, and if we are at all successful in our manipulations pain can always be elicited by pressure on an inflamed appendix. To indicate to you that this mode of examination may be quite trustworthy, I may mention that in one case I ventured to tell the surgeon into whose hands I gave the patient that the appendix was lying behind the cæcum and the operation showed this to be correct; in other cases the point of marked tenderness is only to be found by rectal examination. I saw with one of my brethren some time ago a case in which tenderness was only elicited in this way, and it was the only guide to the origin of the lesion causing symptoms the extreme gravity of which it was easy to estimate. The situation of the tenderness in such cases is, of course, due to the position of the appendix. The importance of being able to elicit this direct tenderness of the affected part cannot be exaggerated; it is the key to abdominal diagnosis; it is recognised by all the authorities—Hawkins, Fowler, and Deaver lay stress upon it. Deaver says it is "always present." Fowler says "in the early stage of the disease tenderness is only elicited when pressure is made in the immediate neighbourhood of the appendix itself." Fowler goes so far when considering diagnosis as to say that "every case of colicky pains in the abdomen suddenly developed with right-sided tenderness should be regarded as a case of appendicitis until this supposition is disproved." Legueu denies difficulty in diagnosis save in exceptional cases. Nothnagel refers one of the difficulties, as I have done, to a false localisation of the pain or an unusual position of the appendix. Talamon holds that the diagnosis of acute appendicitis is as easy as the diagnosis of pneumonia. One warning I would add with regard to the state of the bowels and that is that while constipation is the rule it is not the invariable condition. Some time ago I was looking after a boy with diarrhœa, elevated temperature, some tenderness in the right iliac region, and a history that suggested tuberculous ulceration of the intestine. He was seen for me by another physician but it was left to me to realise a couple of days later that we had both overlooked an appendicitis. The patient fortunately recovered after operation. In fact, the diagnosis of acute appendicitis hangs upon and depends upon our skill in eliciting the essential and distinguishing it from the non-essential and incidental.

INDICATIONS FOR OPERATION.

At the outset of this part of the subject we have to face two strong currents of opinion which cannot be called the medical and the surgical, for the surgeons are found in both camps. Indeed, the French surgeon, Legueu, divides even his surgical *confrères* into radicals and opportunists or temporisers. Probably the best designation for the two schools is to be found in our own literature and we may accept the terms "radical" and "conservative" as indicating the point of distinction between them from the operative standpoint. The radical school has attained its full effulgence in America. Since the publication of Fitz's papers in 1886 and 1888 and the establishment of the appendix as the dominant structure in the pathology of the right iliac fossa American surgeons have more and more adopted the practice of routine excision as soon as appendicitis is recognised. Fitz, Senn, Sands, McBurney, Price, Morris, and Deaver are all names associated with this school. Legueu says: "*Toute appendicite doit être operée à temps.*" If this aphorism be adopted the position is simple; differential diagnosis becomes a mere unpractical refinement and there is nothing left to discuss. The argument in support of this position is that the danger of perforation is great and that it is impossible to determine which cases will perforate and which will not. This is the main point: there are also minor although important points to which I need not refer. This is the point which appeals to those of us who have learnt to dread the possibility of an intense toxæmia from peritoneal infection and who know how rapidly this supervenes in some cases. I myself am so alive to this truly terrible aspect of acute appendicitis and the cases which I see are so often cases in which operation is clearly indicated that were I to take my personal experience of the last ten years as my sole guide I should not be far from the radical position. But here again our individual experience has to be checked by the knowledge of the results of a wider experience.

The conservative school is represented in this country by Treves, Tubby, and Hawkins; in France by Talamon; and in Germany by Nothnagel. Hawkins, on whose work Treves leans, says of the American school that "the gravity of disease of the appendix was measured by the rapidity of death in a few fatal cases rather than by the actual frequency with which a fatal event occurs." Referring to some more recent contributions to the subject he says: "They seem to be compiled by a surgeon for the use of a physician concerning a disease which is in all its aspects familar to the physician but of which the surgeon has seen only the more severe form. They assume a rate of mortality from disease of the appendix which has no foundation in actual figures." Talamon says that the position of the partisans of the extreme view would necessitate operation for every attack of intestinal colic attended with intense pain localised in the right iliac fossa, a rule he thinks sufficiently absurd in itself and not likely to be adopted. Nothnagel speaks of the operation fanatics. Treves says: "It would be as wise to advise immediate operation in all cases of ulcer of the stomach as soon as a diagnosis is made because some cases of ulcer of the stomach end in a fatal perforation." Tubby says: "I am strongly inclined to think that no judicious surgeon is prepared to tie himself down to the practice of routine early operation in all cases but would prefer to watch his cases closely and when in doubt operate at once." The warrant for the conservative position is to be found in the results of a wider experience rather than in that embraced by the individual observer. Some of these results are as follows. Furbringer in 120 cases had 10 per cent. of deaths. Renvers had from 91 to 92 per cent. of recoveries. Guttmann at the Moabit Hospital had 96 per cent. of recoveries. Curschmann in 453 cases had 4·5 per cent. of deaths and nine cases sent to the surgeons. Sahli, as the outcome of a collective inquiry, had a return of 7213 cases which showed that in 6740 cases not operated on 8·8 per cent. died and 91·2 per cent. recovered. Nothnagel in 130 cases had 115 cured or improved, four deaths without operation, and 11 cases sent to the surgeons. Hawkins's statistics of the cases at St. Thomas's Hospital, if we exclude cases of perityphlitic abscess and of general peritonitis, show 190 cases with 190 recoveries and only one operated on. I have collected from the statistics of the medical side of the Edinburgh Royal Infirmary from 1891-92 to 1901-02 (that is, ten years, for one year is wanting) 268 cases, of which 189 were cured or relieved, seven were unrelieved, 23 died, and 49 were sent to the surgeons. I regret that the only point I could be sure of in the statistics of the surgical side was that all the cases of appendicitis were not operated on, showing that the conservative school is represented there also.

It thus appears that in acute appendicitis recovery takes place in from 90 to 95 per cent. of cases without operation. This is the position of appendicitis when it is judged of by a wide experience and it seems to me to be in accord with the experience of many of our brethren in general practice in the country and in the provinces who have not skilled surgical help at their call any and every hour of the day or night as practitioners have in the cities. These figures may well prove a comfort to our less favourably situated brethren, but they throw a greater weight of responsibility on some of us, for it becomes more and more imperative to watch with the closest attention every individual case and to learn to determine the one case in the ten which if it is to be saved must be submitted to the surgeon's knife without delay.

The first question which ought to be faced in every case of acute appendicitis is: Is the appendix rapidly to perforate or promptly to become gangrenous? Early perforation and early gangrene account for most if not for all of the cases of early peritonitis with grave toxæmia. St. Thomas's Hospital

statistics show 36 in a total of 264 cases and of these 27 proved fatal. Perityphlitic abscess may be regarded as a later development, but it supplies 38 cases with 28 deaths in the statistics of the same hospital. The above question ought to be formulated definitely in every acute case. The chances as shown by statistics are fully nine to one against perforation; but differential diagnosis is not based on averages, and it is equally poor comfort to be assured by many authorities that the question cannot be answered until the disaster we desire to anticipate has occurred.

As I understand the matter one great object which the promoters of this discussion had in view was to elicit whatever there is of knowledge and of experience on this point among us. I myself approach it with much diffidence but there are some points which I venture to submit. The first is that if in an acute attack I find that there have been one or two previous attacks, even mild ones, I do not hesitate to advise removal of the appendix at once. My reason for doing so is that I am satisfied that the anatomical relations of certain appendices are such that appendicular trouble is bound to arise. Recurrence is the clinical proof of this and in any recurrent attack the appendix may perforate or necrose, so that the sooner such appendices are removed the better. The second point is that if an acute appendicitis has an early rigor immediate removal is indicated. I have seen early rigor followed speedily by gangrene. But this only disposes of a small number of acute cases. When we come to the remaining cases, and if we are not to adopt routine removal in all instances, the questions necessarily arise: What are we to do? How long are we to continue the medical treatment we may have adopted? and What indications are to guide us in determining for or against operation? As regards the first of these it is quite clear that something must be done and always is done. You all know that purgatives are anathematised and that if perforation occur after the administration of such the medical man who has ordered them is looked upon as a most culpable person. I have not given purgatives in these cases for many a day, but in the earlier years of practice I used repeated doses of saline laxatives in what we called perityphlitis and I had not then a single death. All of us have seen cases where the so-called "fatal" purgative has been taken by the patient on his own initiative and his appendix has not ruptured. Such experiences have their due place. I have referred to the point as I venture to think that statements are made in this connexion which are mere presumptions and are based upon isolated and misinterpreted occurrences.

The next point that arises for consideration is the relief of pain. This is sought for by either hot or cold local applications; these are at least harmless. When, however, we go beyond local measures we at once enter a region where there is a great difference of opinion. You all know how opium and its chief alkaloid are condemned. Their administration relieves pain and gives rest to the patient and to the cæcum. The main argument against their use is that they "mask symptoms" and so they do to the inexperienced and the unwary. Nothnagel is a great advocate of opium and while I am not prepared to follow his method I have found, as he contends, that its previous administration need not mislead, and I can hardly imagine the hospital physician or surgeon being seriously misled by the mere relief of pain consequent upon its administration. If given at all it ought certainly to be limited in its use to the alleviation of intense suffering and as a temporary expedient. I even go so far as to say that the call for the continued use of opium is an indication that operation is desirable. Personally I prefer to use belladonna which relieves spasm and does not dull sensory centres. There is only one further procedure which is worth referring to and that is lavage. There exists in regard to its use some degree at least of the same feeling as exists about the giving of laxatives. The reasons given against its use are open to question. That lavage of the colon and cæcum is dangerous and may cause either perforation or gangrene is a mere arbitrary presumption and has no foundation in fact. Granting that the essential factors in the production of acute appendicitis are as I have represented, there is no measure which one would more instinctively turn to than cæcal lavage, owing to the effect it would have upon the mucous membrane at the mouth of the appendix and the effect it might have in aiding the re-establishment of appendix drainage. Professor Bourget of Lausanne has published an important monograph on this method of treatment. He uses it in all cases of acute appendicitis which come under his care, and he only advises operation after the acute symptoms have subsided and in selected cases. In his monograph he gives the details of 23 cases which occurred in his hospital practice between January, 1901, and February, 1902, which he treated on the lines indicated without a single death; and the clinical records show that some of the cases were of a grave type. My own experience of this method of treatment is too limited to say more about it than that so far as I have yet used it I am satisfied with the results.

Having thus indicated the medical measures which may legitimately be used when brought face to face with a case of acute appendicitis the serious questions still remain: How long are we to continue to use whichever measures we may have adopted? How long are we to wait for alleviation of the condition at the appendix? and What are the indications that surgical interference is the wise course to adopt? I can endorse the precept laid down by others that every individual case ought to be regarded with great seriousness and is to be closely watched for the appearance of any unfavourable symptom. There are, however, definite indications which help us to determine those questions and an accurate mental picture of the steps of morbid processes in the appendix materially aids us. Some of those indications are as follows. The continuance of severe pain in spite of local applications and the administration of belladonna internally may be taken as an indication for operation, for it mirrors almost certainly blockage and severe inflammation. The recurrence of paroxysms of pain indicates operation, for it is a proof that the appendix drainage is being recurrently interrupted and the sooner such an appendix is removed the better for the patient. Great importance is to be attached to the condition at the cæcum as revealed by careful and patient palpation; localised tenderness and swelling are the two phenomena which demand much more patient handling than they often get. If the case has been ushered in by great pain and yet appears to be a mild one as judged by cursory examination be on your guard; that is the kind of case that can perforate within 48 hours. If pain subsides and the appendix remains very tender notwithstanding the use of local applications and the internal administration of belladonna do not wait many hours for lessening of tenderness, for the appendix may be already necrosed and will shortly be gangrenous or a concretion may be completing a perforation. In these instances of necrosis and of threatening perforation the leucocyte count gives no sufficient warning of the threatening disaster. Hubbard, Dunham, Da Costa, Wassermann, and Brown have all dealt with the question of leucocytosis in appendicitis, but on this important point no strong claim of its value is made. I am very suspicious of severe onset, no great local swelling, only moderate tenderness over the cæcum, but a point where deep palpation reveals acute localised tenderness. If it is realised that a blocked and inflamed appendix accounts for such phenomena you will want proof within 24 hours that that appendix has clearly lessened in tenderness and if it has not you will want to have it removed. I again lay great stress upon the cultivation of abdominal palpation as a means of great value, not only in diagnosing appendicitis but in estimating the progress of an acute attack. In the less rapid, which is also the more common, type of case, with marked swelling and tenderness over the whole cæcum, the temperature and the pulse are an index of the measure of inflammatory reaction and the blood examination shows a leucocytosis of somewhere about 15,000 as a rule. If the local and general symptoms do not speedily subside under such measures as have been indicated, and if on further blood examination it is found that the leucocytosis reaches 20,000 or more, the case falls entirely to the surgeons, for pus has almost certainly formed and the condition has to be treated on general surgical principles.

I have sought in what I have said to formulate points which present themselves before grave peritoneal infection has taken place. When it has taken place the facies abdominalis and the rapid and small pulse are indication enough of what has happened. What the promoters of this discussion want to bring out are the indications which will enable us to anticipate this danger and by anticipation to avoid it, and to this object my remarks have been directed. When disaster has occurred there is little difficulty in recognising it and there are not two opinions as to the proper course to adopt. Beyond saying this I do not further pursue this side of acute appendicitis.

Permit me in conclusion to reiterate the main points in

the line of thought which I have endeavoured to present to you to-night. 1. Certain appendices are so formed anatomically that they of necessity give rise to trouble. 2. Interference with the drainage of the appendix is an important factor in determining inflammation. 3. The occurrence of appendicular colic may be taken as a warning that dangerous anatomical conditions exist in connexion with the appendix. 4. In all abdominal cases detailed palpation should be carefully and patiently carried out. 5. Too much emphasis must not be put on the site of pain or on superficial tenderness. Palpation should be directed towards ascertaining the actual condition of the diseased part. 6. Statistics show that from 90 to 95 per cent. of cases recover without operation and the chances against recurrence are as three to one or thereby. Therefore routine removal cannot be accepted as necessary. 7. Operate at once in any case with a history of previous attacks, also in all cases commencing with a rigor. 8. The chief difficulty lies in the early recognition of the cases in which the appendix will necrose or perforate rapidly. In this connexion suspect cases which show constitutional disturbance with little inflammatory reaction round the cæcum but with marked tenderness on deep palpation and an ordinary degree of leucocytosis. 9. In cases which do not call for immediate operation pain may be relieved by hot or cold local applications and by a cautious and sparing use of opium or morphine or of belladonna. Lavage may give good results. 10. Medical treatment should not be relied on for more than from 24 to 48 hours if severe pain continues or an acute tenderness on deep palpation still remains. 11. Later in the disease a continuance of the local and general symptoms along with a high leucocyte count indicates the presence of pus and the necessity for operative interference.

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Edinburgh.

THE EARLY DIAGNOSIS OF ACUTE INTESTINAL OBSTRUCTION.[1]

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IT will, I think, be found that most of us look upon the early diagnosis of intestinal obstruction in a somewhat different way from that in which it was usually regarded 40 years ago. This is because our skill in diagnosis has advanced, but in saying this I am speaking of medical men generally, for it is doubtful whether even the best of us are more skilful than the most brilliant diagnosticians of half a century ago, but as the average of skill has risen we less frequently see cases in which acute intestinal obstruction has been so long overlooked that when the patient comes to a hospital the diagnosis is obvious. Then, too, the responsibility attached to a correct diagnosis has increased enormously in this and many other diseases of the abdomen. Before surgery could help us to any appreciable extent it mattered comparatively little whether or not the diagnosis was correct, for if the patient was suffering from acute intestinal obstruction we could, unless it was due to an external hernia, do little or nothing to relieve him. But now the responsibility of the physician has increased tenthousandfold, for if he fails to suggest that a surgeon should see a case which the necropsy shows to have been suitable for operation it is always quite likely that early surgical interference might have saved the patient's life. On the other hand, the physician may urge the surgeon to operate unnecessarily and on all grounds unnecessary operations are most undesirable.

[1] Being the introductory remarks at a discussion at the Medical Society of London on March 14th, 1904.

Formerly much importance was attached to the elucidation of the problem as to whether the obstruction was high up or low down, but Fagge pointed out in his classical paper, on which most subsequent descriptions have been founded, that often the supposed points of difference in the symptoms were untrustworthy, and we now know that the symptoms are more dependent upon the cause of the obstruction than upon its situation. He classified his cases according to the cause and all the best descriptions since have followed him, as it is important for the surgeon to know the cause for which he has to search. But the result of this treatment of the subject is that very often accounts of acute intestinal obstruction fail to give sufficient prominence to the conditions for which such obstruction may be mistaken, and therefore, as the subject put before us to-night is the early diagnosis of acute intestinal obstruction, I thought the most practical way to attack it would be first to mention the conditions which I have known to be mistaken for it, especially as the best way to prevent mistakes in diagnosis is to be aware of their possibility.

It might be supposed that it would often be difficult to distinguish between severe acute cases of appendicitis unaccompanied by general peritonitis and acute intestinal obstruction but, as a matter of fact, the difficulty only occasionally arises at the bedside and then it will, I think, be found that in most instances of confusion acute appendicitis is mistaken for intestinal obstruction but not of the most acute variety, rather than that the converse mistake is made. The following is a case in point. One Friday evening I saw with Dr. Slater-Jones a man, aged 60 years, who gave a history of severe attacks of colic, once accompanied by jaundice. On the previous Wednesday evening he was suddenly seized with a severe rigor. Dr. Slater-Jones soon arrived and found the patient extremely collapsed with a temperature of 104° F. The next morning it was 99° and normal in the evening, there was some abdominal pain but it was across the top of the abdomen, he was sick twice, and we were told that the bowels had been opened on this day. On Friday he was sick only in the morning and when I saw him in the evening the abdomen was uniformly moderately distended without any dulness, tenderness, or other sign to indicate local disease. The distension made me fear we should have to open the abdomen later but as the pulse was very good, he did not look ill, his temperature was 98°, and he said that he felt better, we decided, as it would have been very difficult to arrange any operation that night, to leave him till the morning, believing that if he continued to improve we should have to conclude he was suffering from gall-stone colic without jaundice or from abdominal influenza. I heard early Sunday morning that he was not so well, therefore Mr. Charters J. Symonds joined us and we learnt that on Saturday there had been frequent very foul stercoraceous vomiting and that we had been misinformed about his bowels —they really had not been opened, not even any flatus being passed, since Wednesday in spite of several enemata. His pulse was 110 and of good volume; he looked well; and his temperature was 98°. His abdomen was distended uniformly without any indication of local disease but we decided upon operation because of the obstruction and continuing distension. We all thought the most likely diagnosis was that there was a gall-stone impacted in his ileum but operation showed a small abscess around the appendix in which a slough had led to a perforation; the peritonitis was not general. Here was a case in which severe and absolute constipation, distension, and stercoraceous vomiting were due to appendicitis which, on the other hand, did not give any indication of its presence and in which the initial rise of temperature only lasted 24 hours. We did not forget that an examination of the blood might have helped us but unfortunately I had not any of the necessary apparatus with me when I arrived at the patient's house. In another case of doubt I have known the presence of leucocytosis correctly turn the balance in favour of an abscess connected with the appendix.

It will be noticed that the case of appendicular abscess just recorded, unlike as it was to most cases of appendicitis, did not lead to a diagnosis of acute obstruction but to one of obstruction of a more chronic kind—viz., by a gall stone—and I think it is extremely rare for the localised peritonitis, caused by disease of the appendix, to be mistaken for acute intestinal obstruction, but it is less rare for a mistake to be made between acute general peritonitis and intestinal obstruction and this is not surprising, for strangulation of the bowel renders possible the passage of bacteria through it

and therefore many cases of acute obstruction quickly become complicated by acute peritonitis, hence it follows that the difficulty of diagnosis is often less the earlier the case is seen, but, on the other hand, probably the symptoms of few diseases vary so much as do those of acute peritonitis. Speaking generally, absence of pyrexia and of leucocytosis is in favour of intestinal obstruction, so also is rapid distension of the abdomen, especially if coils of intestine in which peristalsis is visible can be seen; early and urgent vomiting quickly becoming stercoraceous is in favour of obstruction; the pain is often paroxysmal in obstruction, the abdomen is not board-like or very tender, and there is no cutaneous hyperæsthesia; the patient does not lie in the usual attitude of peritonitis but may bend forward, doubled up by the pain, and the abdomen moves with respiration until later in the disease than is the case with acute peritonitis. But it is essential to bear in mind that every one of these symptoms which have been mentioned as generally indicating obstruction may be met with in peritonitis in which there may be complete absence of the passage of fæces and flatus by the bowel.

Volvulus is the form of intestinal obstruction which most resembles acute peritonitis, nor is this surprising, for owing to the large amount of bowel strangulated and the severity of the strangulation the bowel rapidly permits the passage of micro-organisms which set up peritonitis. Probably the chief distinguishing feature of volvulus is the distension of the abdomen which is, as a rule, much more extreme and rapid than with acute peritonitis and perhaps the pain is less severe and the temperature is lower in volvulus.

Acute hæmorrhagic pancreatitis is apt to be mistaken for intestinal obstruction; the form which it most nearly resembles is that due to acute strangulation of the small intestine but if the patient is suffering from acute pancreatitis the actual obstruction is not well marked, the bowels are often opened several times soon after the onset of the pain, although later they are constipated, there is no distension of the intestines, and as the case goes on the vomiting does not often become stercoraceous. Should the patient live long enough there are signs of a localised peritonitis and pancreatitis at the upper part of the abdomen, the chief being localised tenderness, a feeling of resistance, and later distension due to the formation of a localised abscess with its circumjacent peritonitis. Probably by this time the bowels have been opened again and slight pyrexia has supervened. Several cases of pancreatitis have been recorded as surviving and laparotomy has been undertaken under the impression that they were cases of intestinal obstruction, but there is no evidence that in such the operation has been of benefit; indeed, it may have turned the scale against the patient; but whether we shall become sufficiently sure of a diagnosis of acute pancreatitis to withhold exploratory laparotomy is doubtful but at any rate this is the goal to be aimed at. It need hardly be said that if a distinct abscess forms operation will be needed.

Perforation or rupture of any hollow viscus or cyst within the abdominal cavity may be mistaken for intestinal obstruction, especially strangulation of the small intestine, but the mistake is one of the least serious because immediate laparotomy is necessary for either perforation or obstruction. The difficulty is at its greatest when the previous history gives no suspicion that rupture might occur—e.g., there is nothing to lead us to suspect a gastric ulcer or an ovarian cyst. Our chief guides to correct diagnosis will be that the onset of the symptoms is more severe and sudden with perforation even than with strangulation of the small intestine by a band and symptoms of peritonitis supervene much more early with perforation. The vomiting is more likely to be severe and later to become stercoraceous in obstruction in which the pain is almost always referred to the umbilicus and local tenderness is no guide to the seat of obstruction but not infrequently local tenderness and pain are guides to the seat of perforation. The abdomen usually becomes immobile and distended earlier in perforation than obstruction.

Thrombosis and embolism of the mesenteric vessels both lead to symptoms which may closely resemble those of acute intestinal obstruction. Fortunately the conditions are rare, for nothing but harm can follow opening the abdomen. Usually there is some obvious cause for the trouble, as heart disease which might cause embolism or some intra-abdominal trouble which might cause thrombosis. The sudden abdominal pain—referred to the umbilicus in both cases—and the collapse are equally marked in vascular obstruction and intestinal obstruction, in both vomiting is early and may become stercoraceous but probably it is altogether a more striking symptom in intestinal obstruction. If a vessel corresponding to a large area of bowel is blocked abdominal distension will be earlier than in a case of acute strangulation of the small intestine but the characteristic symptom is the passage of much blood from the bowel and if the superior mesenteric artery or vein is blocked some blood may regurgitate into the stomach and be vomited. Sometimes the blocking occurs in the aorta and then if this be in such a situation that the mesenteric arteries are interfered with there will be in addition to the symptoms due to interference with the mesenteric vessels severe sudden cramp-like pain and loss of power in the legs. The diagnosis from intestinal obstruction is then of course easy. A patient recently under my care who was suffering from heart disease was suddenly taken with pain and complete loss of power in the legs, abdominal pain and collapse so severe that he died in ten hours in spite of treatment; embolism of the abdominal aorta implicating the mesenteric arteries was found. I need hardly add that if the renal arteries are implicated hæmaturia will be an aid.

Intestinal colic is a fruitful source of error and many a patient's life might have been saved if he had not been regarded as suffering from what is called "simple colic." I need not take up the time of a society such as this with the diagnosis of lead colic which I have seen mistaken for acute intestinal obstruction. I would only point out that severe vomiting is quite the exception in lead colic and that we too often neglect to look for lead in the urine. With regard to other forms of intestinal colic it is important to remember that very severe intestinal colic—restricting the term to pain due to some local irritation usually caused by an error of diet—is rare in adults, while, on the other hand, acute intestinal obstruction—except that due to intussusception which has its own special symptoms—is rare in children, so that the opportunities of confounding intestinal colic with acute intestinal obstruction ought to be few. It is other forms of abdominal disease—e.g., appendicitis—rather than acute intestinal obstruction which are often erroneously set down to colic. Still, the mistake does occur and it is mainly to be avoided by noting the severity of the symptoms. If the patient's abdominal pain is so severe that he—an adult—sends for a medical man who finds that there is no diarrhœa and that there is no obvious indication of any cause for the pain such as a renal calculus, lead, disease of the appendix, &c., but the symptoms are not severe enough to indicate certainly acute intestinal obstruction, nothing should then be done except to apply warmth to the abdomen and to give an enema if there has been constipation, but no opium, as that will mask the symptoms. On a second visit a few hours later it will usually be found, if the case is one of acute intestinal obstruction, that the severity of the pain, the collapse, the state of the pulse, and the frequent urgent distressful vomiting leave no room for doubt and the abdomen should be opened at once. In the cases under discussion usually the severity and frequency of the vomiting and the state of the pulse are the first symptoms to show that the cause of the pain is acute intestinal obstruction, later the patient's expression and his collapse show this disease, in which it will be borne in mind the pain is often relieved by vomiting.

Biliary and renal colic can hardly ever be confused with acute intestinal obstruction if care is taken. Here, again, the severity of the vomiting and the collapse together with the facial expression and the feeble rapid pulse met with in intestinal obstruction will prevent an error. I have known the abdominal pain in a patient who had ulcerative colitis with constipation lead to an erroneous diagnosis of intestinal obstruction.

Acute intussusception may be confused with severe diarrhœa in children but as a matter of fact the mistake can nearly always be avoided if sufficient care is taken. The detection of a tumour either in the abdomen or the rectum is, of course, conclusive and the sufferer from acute intussusception at first has bloody diarrhœa, later constipation supervenes, but he commonly at some time passes pure blood, whilst in the severe enteritis of children the motion, if blood is present at all, consists of fæces, blood, and mucus throughout and constipation does not supervene till the patient is convalescent. Even if the case of diarrhœa is so severe as soon to lead to collapse this is usually preceded by pyrexia and often in these cases there is frequent and severe vomiting, but this is not usually a striking symptom in intussusception unless severe constipation comes on early in the case. Cholera may closely resemble acute obstruction.

There are some conditions which are met with in women which may be difficult to tell from acute obstruction—namely, the twisted pedicle of an ovarian cyst, a ruptured ovarian cyst, a ruptured extra-uterine fœtation, a ruptured pyosalpinx, and hysteria. In the three cases of rupture these are really instances of perforative peritonitis and therefore all that has been said in connexion with the diagnosis of that from acute obstruction will apply here. I have seen a ruptured extra-uterine fœtation mistaken for acute appendicitis, for it led to a tumour and feeling of resistance on the right side, but the slight elevation of temperature and the signs of pregnancy soon led to a correct diagnosis. In the only case of a twisted pedicle of an ovarian tumour leading to difficulty that I have met with the presence of a palpable right-sided tumour which was tender led to a diagnosis of appendicitis, which was perhaps a pardonable mistake as the patient was only 12 years old. In most cases the locality of the pain and tenderness, with in some the detection of a tumour, will usually lead to a correct diagnosis from acute intestinal obstruction. I have known great care necessary to distinguish hysteria from acute peritonitis but hysteria does not simulate acute intestinal obstruction.

Lastly, in any case of severe pain in the abdomen we should think of pleurisy and pneumonia but when early in the course of either of these the symptoms are mainly abdominal they suggest peritonitis rather than obstruction. I have seen pneumonia thought to be peritonitis but never obstruction.

Having very briefly reviewed the conditions which may be mistaken for acute obstruction we pass on to the diagnosis of the kind of obstruction and here it is of fundamental importance to remember that the early symptoms of acute intestinal obstruction are caused by the strangulation of the bowel and not by its obstruction. This is illustrated by the fact that a volvulus of the large intestine gives very sudden acute and serious symptoms—because of the strangulation—while the symptoms of a complete obstruction—say, by a gall-stone—without strangulation are much less severe. Indeed, the more we think of it the less important does mere obstruction become. For example, I remember the case of a woman whose bowels had not been moved for a month, it was thought owing to the pressure of a huge renal tumour compressing the bowel, but the tumour was really a great mass of fæces blocking the descending colon. She was not acutely ill. We do not observe acute symptoms even in spite of prolonged constipation in the cases in which the intestine is compressed by peritoneal adhesions due to the various forms of peritonitis. Think of the state of the intestines all compressed into one mass, such as we see at a post-mortem examination on a case of chronic peritonitis, yet there are no acute symptoms. The other day I saw the abdomen opened for chronic obstruction; the intestines were all matted together, the bowels had been rarely opened, and only with the greatest difficulty, but there were no symptoms of acute obstruction. The upshot of this is that to diagnose the form of obstruction we must, if the symptoms are severe and acute, say to ourselves the patient has got some form of obstruction that is likely to be associated with strangulation—e.g., a band, internal hernia, volvulus, kinking, or anything that will strangulate the bowel, and he is not suffering from compression, stricture, or impaction of contents unless these are complicated by strangulation. It illustrates my point to remind you that intussusception is severe in proportion as the bowel is strangulated. It is true that if a large number of obstructions of the small intestine are contrasted with a large number of obstructions of the large intestine the symptoms of the former will usually be much more acute than of the latter but this has nothing to do with the position of the obstruction; it is because whatever obstructs the small intestine generally at the same time strangulates it. Usually speaking, there are no acute symptoms unless there is strangulation and the symptoms of this are sudden agonising pain, often paroxysmal, referred to the umbilicus, frequent, early, distressful, and severe vomiting, a rapid, feeble pulse, an ashy, pinched countenance, a normal or subnormal temperature, and collapse so severe that a previously healthy man may in a few hours be at death's door, hence when these exist we infer that the bowel is strangulated and it would be more accurate to diagnose such a case as acute strangulation of the bowel rather than as acute intestinal obstruction, for as already mentioned, these symptoms only enable us to diagnose strangulation of the bowel irrespective of the seat or cause of the strangulation. If there is great and rapid distension in addition to the symptoms of strangulation we infer a volvulus; if there is history of chronic obstruction—e.g., that due to malignant growth in the large intestine—the distended bowel behind the obstruction has become kinked or strangulated in some way; there may be other evidence of intussusception; or if, as is usually the case, we decide none of these are present and there is no external hernia, then, arguing from the experience of the post-mortem room, we learn that the small intestine is almost certainly the seat of the strangulation, a view which is supported if thus early in the case there is not much intestinal distension, for distension in such a case is partly due to obstruction of the bowel above the strangulation—but in strangulation of the small intestine there is not much of this—and partly due to paralytic distension of the strangulated bowel, but usually when the small intestine is strangulated not much of it is affected. But when we have arrived at the diagnosis of strangulation of the small intestine we cannot from the symptoms say what part of it is affected or the cause of the strangulation. Our knowledge of morbid anatomy shows that the cause of the strangulation may be one of many, such as a band of some sort, an internal hernia, &c. Excluding external hernias internal strangulations are far the most important variety of obstruction to diagnose early, for (1) they are frequently of such a nature that the surgeon can completely relieve them; (2) unless relieved they will quickly kill; (3) they usually come in previously healthy adults in the prime of life; and (4) there is usually no concomitant disease likely to kill the patient.

Among intestinal obstructions belonging to the entirely different class in which there is no strangulation, obstruction of the ileum by a gall-stone is one of the most acute, but here the fact that the patients are nearly always women over 50 years of age while strangulation usually occurs in men under the age of 50 years will be of help. Further, the acute symptoms already given as indicating strangulation are rarely so severe in obstruction by gall-stones with which, too, there may be a history of jaundice. As already mentioned, chronic obstruction as by a growth may suddenly give rise to very severe acute symptoms, and these may be owing to strangulation by kinking of the distended bowel above the growth but they may also be due to perforation of a distension ulcer. When, as sometimes occurs, they show themselves suddenly in a case in which the growth of the bowel has given rise to no symptoms the diagnosis is very difficult. If acute symptoms supervene upon chronic obstruction there is almost certainly a stricture of the large intestine—and strictures of this are virtually always carcinomatous—for except gall-stones the only chronic obstruction of the small intestine is that due to compression of a large extent of bowel from some form of chronic peritonitis and this compresses so much bowel that strangulation behind the compression rarely if ever occurs. Perhaps this is the best place to mention that visible mapping out of the distended bowel is a most uncertain symptom, for it may be absent in obstruction or it may be present in cases in which no obstruction is present—e.g., peritonitis—and, again, it may be impossible to tell whether it is the large or small intestine which is distended. Variation in the amount of urine passed is another symptom on which but little reliance can be placed.

I am very fully aware of the numerous shortcomings of these opening remarks which have had to be brief owing to the limited time at my disposal, but they are only intended as a basis for discussion. Fortunately, at the bedside the difficulties are often less than they appear on paper.

Harley-street, W.

A CASE OF ECLAMPSIA TREATED BY THE ADMINISTRATION OF CHLOROFORM.

BY JOHN FREDERICK JENNINGS, M.B. LOND., F.R.C.S. ENG.,
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THE patient, who was a primipara, 23 years of age, was admitted into St. Bartholomew's Hospital at 10.45 P.M. on Sept. 10th in an unconscious condition with the history that she had been seen to fall out of a railway carriage on to the platform whilst the train was still in motion. On arrival at the hospital she was not only comatose but had no corneal

reflex. The pupils were equal, her colour was good, the knee-jerks were increased, there was no paralysis or œdema, and she had no fits till fully an hour after admission. Her temperature was 97° F. and her pulse rate was 64. She was eight months pregnant and the fœtus was alive; no uterine contractions were apparent; the os internum admitted one finger easily. The urine contained about one-quarter albumin. At midnight twitching of the face was noticed. On Sept. 11th the course of events was as follows. At 12.20 A.M. three definite fits occurred, commencing in the face and following each other in rapid succession. The bowels were well opened by an enema. At 1.30 A.M. there were four more fits. At 1.45 A.M. the cervix was dilated with the finger, the membranes were ruptured, and a large quantity of liquor amnii was let out. Labour pains commenced and soon became strong. The patient was given chloral hydrate and potassium bromide without much effect; she also had saline enemata which she retained. A steam bath was given but appeared to increase the number and severity of the fits and did not produce sweating. Three-minim injections of hypodermic solution of morphine had no effect on the fits and made the general condition worse. The bowels were well opened with compound powder of elaterin and diaphoretics and diuretics were given.

During the 12 hours following admission the patient had 37 fits and her face became œdematous and bloated. Chloroform was given and had a markedly beneficial effect; the severity of the fits was diminished and the patient's pulse, complexion, and respiration improved. She was delivered by forceps at 1.40 P.M. on Sept. 11th; the child was small and apparently at about the eighth month. Considerable hæmorrhage followed the birth of the placenta. The fits still continued after the birth of the child till noon on the 14th. She had 39 fits before and 75 fits after confinement, a total of 114. From noon on the 11th till noon on the 14th she was kept more or less continuously under chloroform and it was noticed that if the chloroform was stopped the fits became more frequent and more severe. Not only so, but chloroform was found to improve the pulse, the respirations, and the colour of the face. After the birth of the child the urine increased in amount (the patient was taking ammonium acetate and potassium citrate) up to 85 ounces per diem and the albumin diminished till only a faint cloud was present. She did not properly regain consciousness till the 16th, though she had asked at times for various things she desired. Both mother and child have since done well.

It is interesting to note in this case the excessive number of the fits and the beneficent effect of chloroform as compared with the apparent inefficacy of the various other remedies which were tried. In round numbers, the daily relation between the number of the fits and the quantity of urine which was passed was as follows: on the first day, 70 ounces of urine and 25 fits; on the second day, 85 ounces of urine and 15 fits; on the third day, 55 ounces of urine and 45 fits; and on the fourth day, 30 ounces of urine and five fits.

I am indebted to Dr. W. S. A. Griffith for permission to use the notes of this case.

Cardiff

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON TWO CASES OF RODENT ULCER TREATED BY RADIUM.

BY A. STANLEY GREEN, M.B., B.S. LOND.

THE following notes of two cases of rodent ulcer seem to me to be of sufficient interest for publication as both of them yielded to the action of radium after resisting the action of the x rays for a lengthened period.

CASE 1.—The patient was a married woman, aged 75 years, who came to me with a rodent ulcer attacking the right ala nasi, extending upwards on the septum and the external wall of the nose and affecting the anterior end of the inferior turbinate. She had undergone three operations; the last one had involved the labio-nasal fold and a portion of the incision had remained unhealed and was now ulcerating. The discharge from the nose was troublesome and caused irritation of the upper lip. The x rays were applied for eight weeks every second day, the time of exposure varying from five to 20 minutes. The ulcerated surface in the labio-nasal fold rapidly healed under their influence, but no impression was made on the rodent ulcer which progressed along the septum slowly but surely. On July 2nd she went home, promising to return in a month, but it was September before I saw her again. The portion which had healed looked very well and was quite sound, but there was no improvement in the nose. For one month I gave applications of the high-frequency current, my thumb acting as the electrode. As there was no improvement I tried applications of radium bromide in a glass tube, the tube being held within the nose for periods varying from five to 20 minutes every second day. Progress was very rapid and in three weeks the ulcerated surface was soundly healed and remains so up to the present.

CASE 2.—The patient was a man, aged 65 years, who had been suffering from a rodent ulcer on the right side of the scalp for the past two years. He had put off treatment and the ulcerated surface was of the size of a shilling and was slowly increasing in area. The x rays were tried and exposures varying from five to 20 minutes were given every second day for one month without any improvement. The patient went away for six weeks and returned with the ulcer in the same condition as before. Two more exposures of 20 minutes were then given, but owing to a severe attack of influenza he was compelled to interrupt the treatment for five weeks. I then commenced the application of radium bromide, the tube being held up against the ulcer for 15 to 20 minutes. Seven exposures were given in a month. The ulcer was then quite healed and the rapidity of the healing after the application of the radium was in this case most striking.

Lincoln.

A CASE OF UNUSUAL DISLOCATION OF THE CLAVICLE.

BY ARTHUR C. BIRD, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case being one of extreme rarity seems to be well worth recording. The patient, who was a man aged 38 years, met with an accident while riding a bicycle from an adjoining village to his home on the evening of Jan. 1st. He was somewhat under the influence of alcohol and was also carrying a bag of vegetables on the lamp crook of his machine, which was placed just below the handle bars and over the front wheel. On descending a hill the front wheel turned somewhat and caught in the bag of vegetables. The man then fell off on to his left shoulder and head and became unconscious. He was taken home in a cab and did not recover consciousness for some time, but when he did he complained of great pain and inability to move his left shoulder. When I saw him he was in a semi-conscious condition with his pupils reacting sluggishly to light and to accommodation. On examining the left shoulder I found that the left clavicle had been dislocated backwards and torn from the acromion process of the scapula. On dipping my fingers behind the acromial end of the clavicle, I could, with some force, bring the acromial end forward and downward into position, but on releasing my hold the acromial extremity (or, to be more correct, the whole clavicle, for there was no fracture) was immediately pulled backwards by the trapezius muscle. That night I gave him five grains of calomel, put him on a fever diet, and had ice applied to his head. On Jan. 2nd he was removed to the Victoria Cottage Hospital, Sidmouth, and was kept quiet, and on the 3rd his general condition was so much improved that I decided to endeavour to obtain permanent reduction of the dislocation. Nitrous oxide gas and ether having been given by Dr. G. A. Leon of Sidmouth, I easily managed to bring the acromial extremity down into position and having applied a flannel spica bandage I doubled up a firm sponge and placed it on the top of the acromial end of the clavicle and then put on a Bavarian plaster-of-Paris shoulder cap which completely covered the sponge. With a large pad in the left axilla and the left arm in the Sayre's position for ordinary treatment of fractured clavicle, I managed to make the

chief pressure over the left shoulder and under the left elbow with, of course, occasional turns round the body. The patient left the hospital in a few days. The shoulder was kept in this splint for five weeks and when the splint was removed at the end of that time the injured shoulder was found to be perfectly symmetrical with the other one and all the parts were in excellent position. Passive movements were then employed, with the rubbing in of liniments, and the patient now (Feb. 22nd) has excellent mobility in his left shoulder-joint and is able to use his arm well. It is probable that the superior and inferior acromio-clavicular ligaments, as well as the conoid and trapezoid ligaments, were ruptured.

Sidmouth.

A CASE OF SUBMAXILLARY ABSCESS FOLLOWED BY FACIAL PARALYSIS.

By JAMES C. MCWALTER, M.D. BRUX., F.F.P.S. GLASG.

So seldom is it that the relation of the seventh nerve to the chorda tympani and the salivary secretion can be pointed out as a cause of death that an account of a case where the connexion seems unequivocal may be worthy of record.

The patient was an infant, aged about five months, and the mother brought her to me for an ordinary scrofulous abscess situated under the jaw. The child was otherwise healthy and well nourished and the swelling was ordered to be poulticed. This instruction was carried out too faithfully by the mother, who continued it after the abscess discharged, neglecting to bring back the child meanwhile. When the raw surface began to heal she was alarmed by the extraordinary contortion of the child's features when in the act of crying, and coming to me in terror she was told that the child had facial paralysis of which all the typical signs were present. The contraction of the scar from the abscess had evidently involved some fibres of the facial nerves but treatment was now unavailing to restore it although continued for some weeks. Shortly afterwards symptoms of involvement of the secretory fibres became manifest and the infant commenced to waste away. The mother, believing that the breast milk was not agreeing with the child, fed her on cow's milk and the wasting became still worse. The infant seemed to lose the desire for nourishment, the power of sucking, and the function of assimilation, though without any evident lesion other than the involvement of the seventh nerve. She became gradually weaker and died apparently from sheer lack of nutrition.

Dublin.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

MIDDLESEX HOSPITAL.

A CASE OF FOREIGN BODY IMPACTED IN THE LEFT BRONCHUS; REMOVAL BY OPERATION.

(Under the care of Dr. W. PASTEUR and Mr. T. H. KELLOCK.)

A SCHOOLBOY, aged five years, was admitted into the Middlesex Hospital on Sept. 28th with the following history. On the 23rd he brought home a small glass stopper which he had picked up in the street and showed it to his mother. A few minutes later the father called her back to the room which she had just left to find the child lying on the floor "fighting for his breath." His face and lips were blue and his eyes were "starting." Guessing that he had swallowed the stopper she picked him up by the heels and shook him violently with marked relief to his symptoms, but the stopper did not reappear. He was at once taken to the hospital, x-rayed with a negative result, and as he was then breathing quite quietly allowed to go home again. On the 27th he was seen by a local practitioner who discovered physical signs at the apex of the left lung which he attributed to impaction of the glass stopper in the bronchus leading to the upper lobe. On admission the boy looked ill. His temperature was 102·8° F. and his complexion was pale and slightly dusky. The respirations were 36 per minute but not laboured. The alæ nasi moved slightly. There was no stridor during ordinary breathing but with cough or deep breathing there was a stridulous wheezing sound. The cough was loud, inclined to be brassy at times, and decidedly paroxysmal. The pulse was 110 and the urine was normal. On examining the chest there was marked loss of movement on the left side, which felt smaller than the right. The heart's apex beat was in the fifth interspace in the nipple line. The percussion note was a trifle short over the left upper lobe but there was no dulness. Vocal fremitus was impaired over the left front as low as the level of the fourth rib and behind in the suprascapular region and part of the interscapular region. The breath sounds were very weak all over the left upper lobe and had entirely lost the vesicular quality. The breathing was also much weaker than normal over the left base but more audible than over the apex. The voice sounds were audible but weak and distant all over the left chest. With the exception of an occasional rhonchus there were no adventitious sounds. The right lung was healthy. Dr. Pasteur saw the child on Oct. 1st and at once asked Mr. Kellock to see him. Mr. Kellock recognised the boy as having been under his care a few months before for an injury to the hand. At that time he was healthy and robust looking and Mr. Kellock was much struck with the change in his appearance. The child was again examined with the screen when it was noticed that there was practically no movement of the ribs on the left side in respiration. Dr. Pasteur and Mr. Kellock were unable to see anything in the region of the left bronchus but Mr. C. R. C. Lyster fancied he could detect a faint shadow in that situation. Dr. Pasteur and Mr. Kellock agreed that in the face of such a definite history and with physical signs so pointedly suggesting obstruction of the left bronchus an attempt to relieve the condition by operation should at once be made, the more so that the oscillating temperature and serious illness of the child made it probable that local inflammation and suppuration were taking place.

Operation was immediately proceeded with. Chloroform having been administered the trachea was opened below the isthmus of the thyroid, three of the cartilaginous rings being divided. As soon as air entered through the wound the child coughed a little but expelled nothing. On passing a probe downwards and into the left bronchus a foreign body was distinctly felt and on measuring the distance it was found to be about three and a half inches from the lowest part of the opening in the trachea. Attempts were made to dislodge it by means of the probe but they were unsuccessful as was also an attempt to grasp it by means of long forceps. A piece of silver wire twisted into a loop at the end was then tried, passed down to the foreign body, and rotated. Whilst this was being done the child rather suddenly coughed up about one drachm of thick pus. On the next attempt the wire evidently got beyond the foreign body and dislodged it, for it was seen with a good deal of mucus to emerge from the wound for an instant but was sucked back again at once on an inspiration occurring. Fortunately, it was found on examination to have returned to its original situation; a rather stiffer loop of wire was passed down to and beyond it, on withdrawing which the glass stopper was delivered through the wound. The pus and mucus having been thoroughly cleaned away from the wound, the opening in the trachea was closed by fine silk sutures passed through the intervals between the cartilaginous rings but not entering the lumen, the muscles were brought together by one or two fine silk stitches, a small drainage tube was put in the lower angle of the wound reaching nearly to the sutured trachea, and the skin wound was closed round this by means of interrupted horse-hair sutures. A light dressing was applied and the child, who had borne the operation very well, was sent back to the ward. The neck was dressed on the second day and the drainage tube was removed; there had been very little discharge through it and the upper part of the wound had practically healed. Five days later, the wound having quite closed over, a little fulness was noticed at the lower part; this was reopened with a probe and a few drops of pus were let out and complete healing took place a day or two after this. There was never any escape of air

through the wound. There was a marked diminution of symptoms from the time of operation onwards. The temperature which before operation had been high and irregular, fell at once and remained normal. The cough immediately lost its paroxysmal character but persisted for several days. The condition of the lung rapidly improved and, beyond slight impairment of movement, the physical signs were practically those of health by the end of the fourth day. There was a striking change in the child's colour and general condition and he continued to make good progress up to the date of his discharge on Oct. 26th.

Remarks by Dr. PASTEUR and Mr. KELLOCK.—The features of interest in this case are mainly surgical. We were fortunate in obtaining so definite a history that there could be no reasonable doubt as to the cause of the obstruction. The x-rays screen examination only gave an indefinite shadow in the region of the left bronchus. After removal the stopper was found by Mr. Lyster to offer a resistance to the x rays equal to nine centimetres aluminium, which will only give an indefinite shadow through the thorax of a child about this age. Measurements taken at the time of the operation and subsequently applied to the trachea of a child of about the same age showed that the foreign body must have been lodged just at the bifurcation of the left bronchus.

It is worthy of note that a foreign body such as was found in this case should have given rise to the formation of an appreciable amount of pus in the course of a few days. Septic changes would not have been surprising had it been an organic body capable of decomposition or of such irregularity of surface as to be likely to cause ulceration. From the absence of blood in the pus that was liberated and the rapidity of recovery we conclude that the pus in this case had been pent up in one of the larger bronchial tubes rather than in a cavity caused by ulceration.

The operation itself calls for little comment. It was evident that we had to deal with a foreign body impacted in the bronchus and there was so little likelihood of its being coughed up on opening the trachea that an opening as low as possible seemed desirable. On ascertaining that the body was lying some way down the left bronchus and after an unsuccessful attempt to reach it with tracheal forceps, these were abandoned in favour of a twisted loop of wire similar to that successfully used by Mr. Kellock in a previous case for the removal of an impacted haricot bean in the left bronchus. The modern plan of completely closing the trachea by sutures was attended with complete success.

ROYAL BERKSHIRE HOSPITAL, READING.

TWO CASES OF THROMBOSIS.

(Under the care of Dr. FRANCIS H. HAWKINS.)

FOR the notes of the cases we are indebted to Dr. W. T. Scott, house physician.

CASE 1. *Multiple thrombosis; embolism of the middle cerebral artery; death.*—The patient, a married woman, aged 33 years, was admitted on Oct. 15th, 1903, into the Royal Berkshire Hospital, Reading, under the care of Dr. Hawkins, complaining of pain and swelling of the left leg. She had never suffered from any definite illness but for some time past had felt "out of sorts." She had had three children, the youngest being two years old. Labour was in each case normal. One month previously she had pain in the calf of the left leg which was followed by some swelling. Soon after she had a sudden severe pain round the lower part of the chest, lasting for three days. A week previously she began to complain of pain in the left leg, especially in the groin, and the limb became swollen. For a fortnight before admission she suffered from profuse perspirations. There had been no cough.

On admission the patient was dark-haired, of medium height, somewhat spare, with slight flushes over the malar bones and an anxious expression. The whole of the left leg was œdematous and pitted on pressure except over the dorsum of the foot, where the œdema was very fluid and fluctuation could be obtained. Tenderness was most marked in the groin, behind the knee, and over the calf of the leg. There was no pain or swelling of the right leg. The heart was normal in position and there were no murmurs. No abnormal physical signs were observed on examination of the lungs. The abdominal and pelvic organs appeared to be normal. The urine gave an acid reaction; it had a specific gravity of 1018 and contained no albumin or sugar. A blood examination gave the following results: red blood corpuscles, 4,200,000 per cubic millimetre; white blood corpuscles, 9000 per cubic millimetre; and hæmoglobin, 80 per cent.

For the first ten days after admission the patient's condition steadily improved, the tenderness and swelling of the left leg gradually disappearing. She complained of a troublesome cough occasionally but no abnormal physical signs were detected in the lungs. On Oct. 25th at 5 A.M. when visited by the nurse she was quite comfortable and remarked what a good night she had passed but feeling thirsty she asked for a glass of water. When the nurse returned with this a minute or two later she found the patient crying and unable to speak. On examination it was noted that the patient was not unconscious; there was no stertor, the pupils were equal, the mouth was drawn over to the left, the tongue was protruded to the right, and there was paralysis of the right half of the occipito-frontalis muscle. The right arm and right leg were completely paralysed and the knee-jerks were absent. The pulse was of low tension. On the 26th the patient seemed brighter and two days later could say "yes," answering "yes" to all questions but if she meant "no" shook her head after saying "yes." The swelling of the left leg had nearly disappeared when on Nov. 2nd, eight days after the hemiplegic attack and two months after the left leg began to swell, the right leg became tender. On the 3rd the right leg was very tender and œdematous. This condition increased and the whole of the leg and thigh became very swollen. Three days later the swelling began to subside but the dorsum of the foot became red and tender with some lymphangitis. The patient's condition gradually improved and she tried to say something besides "yes" but was usually quite unintelligible. The knee-jerk became exaggerated and ankle clonus was readily obtained during a few days. On the 17th, 15 days after the right leg became œdematous, there was tenderness over the left brachial veins but no œdema of the arm or the hand. A thrombus could be distinctly felt in the left brachial and median basilic veins. At this time the patient became much distressed, her pulse was 140, and her respirations were 45, a condition which continued until her death. On the 22nd, five days after the left arm, the right hand was noticed to be œdematous and just below the elbow there was marked tenderness. Three days later the right hand and forearm were very swollen, the œdema over the dorsum of the hand being so fluid as hardly to pit on pressure. The patient's condition gradually became worse, the abdomen became greatly distended, and death occurred on Dec. 6th. The temperature throughout the illness hardly rose above normal until the last fortnight, when the evening temperature was usually about 101° F.

Necropsy.—At the post-mortem examination the left pleural cavity contained a moderate effusion of blood-stained serum. A large recent infarct was present at the right apex of the lung, as well as several smaller infarcts in the left lower lobe. The left lung was partly collapsed. The heart contained several small ante-mortem clots in the ventricles and auricles, one being adherent to the mitral valve. There was no mitral stenosis. The liver showed some passive congestion. A large not very recent infarct was found in the spleen. A small infarct was present in each kidney; both were beginning to cicatrise. The intestines were dark and congested. The internal saphena veins in both legs and the femoral vein in the left leg were blocked. There was marked œdema of the right arm below the level of the insertion of the deltoid muscle. There was a large area of softening in the region of the internal capsule of the brain on the left side.

CASE 2. *Thrombosis with extravasation of blood in the left lower limb; gangrene; amputation; recovery.*—The patient, a married woman, aged 50 years, was admitted on Nov. 12th, 1903, into the Royal Berkshire Hospital under the care of Dr. Hawkins, complaining of pain and swelling of the left leg. She had been anæmic since the birth of her youngest child, 14 years previously. The labour was natural and there was no excessive hæmorrhage. She had not felt short of breath or noticed any swelling of the feet but always felt weak and tired. She stated that the pain and swelling in the leg began rather suddenly a week before admission. During the first four days she had continued her work but at the end of that time the swelling became much greater and the pain more severe and she had to take to her bed.

On admission the patient was a very pale woman, rather emaciated, with dark hair turning grey. The whole of the

left lower limb was very œdematous and pitted on pressure except over the dorsum of the foot where the œdema was very fluid. There were much pain and acute tenderness, especially in the groin, behind the knee, and at the inner side of the tendo Achillis. From the knee to the heel on the inner side and the front of the leg there was a mark resembling a large bruise, being green and purple in colour. There were similar but smaller marks behind the knee and behind the trochanter. There were also red purpuric patches scattered over the same areas, while the region behind the malleolus was of so vivid a blue that it looked as though it had been stained with methylene blue. The heart was normal in position; a systolic hæmic murmur could be heard over the pulmonary cartilage. No abnormal physical signs were detected in the lungs and the abdominal and pelvic organs appeared to be normal. The urine gave an acid reaction and had a specific gravity of 1020; it contained no albumin or sugar. A blood examination gave the following result: red blood corpuscles, 2,500,000 per cubic millimetre; white blood corpuscles, 22,000 per cubic millimetre (neutrophile cells 80 per cent.; lymphocytes and hyaline cells, 20 per cent.); and hæmoglobin, 28 per cent.

During the first fortnight the pain and swelling gradually diminished but several blebs formed over the inner side and back of the leg. On Nov. 26th it was noticed that the toes of the left foot were dark in colour and rather shrivelled. There was absence of sensation, tactile and painful, over the lower third of the leg and over the foot. She complained that the foot felt numb. During the next few days the foot and ankle became gangrenous and by Dec. 1st a line of demarcation began to form about the middle of the leg. The foot was then quite black and dry but the lower third of the leg was moist and gave out an offensive odour. The pulsations of the popliteal artery could be easily felt and operation was postponed so long as the patient's general condition remained good in order to allow the œdema of the thigh to disappear as far as possible. On the 3rd the patient began to complain of severe pain in the leg and her temperature, previously normal, rose to 101° F. Immediate operation was therefore decided on. Amputation of the limb through the middle of the thigh was performed by Mr. W. J. Maurice. At the point of amputation a blood clot of the size of an orange was found lying in a distinct capsule in the neighbourhood of the large vessels. The wound healed by first intention and the patient made a good recovery.

Remarks by Dr. HAWKINS.—The first case recorded is interesting: (1) clinically in showing venous thrombosis in all four extremities and in œdema being present in three but absent in one (the left arm) and it illustrates the fact that venous thrombosis may occur without producing the consequences more frequently met with; and (2) pathologically in having a thrombus on the posterior cusp of the mitral valve. There was no stenosis of this valve. This thrombus on first sight gave somewhat the appearance, except in colour, of the vegetative excrescences of a malignant endocarditis; it, however, peeled off with some pressure, showing the underlying surface to be normal in appearance but of the colour of a port-wine stain. To this or to the other smaller thrombi were due the emboli in the brain, the lungs, the kidneys, and the spleen. From the examination of the blood nothing definite could be determined as to the cause of the thrombi so that one can only suggest that they were the product of blood stasis consequent on debility.

The second case is recorded as illustrative of gangrene following venous thrombosis with blood extravasation (unfortunately the vessels of the amputated limb were not examined, the limb being disposed of before an examination could be made), but during the time the case was under my observation I so regarded it. However, the possibility of such has been much discussed and I may be wrong in so describing it, but I would suggest that the pressure of a blood clot due to the venous thrombosis pressed upon the arteries and so caused the gangrene. From the facial aspect of this patient, the yellowy, almost lemon tinge of the skin of the face and the trunk, the pale lips and pearly conjunctivæ, the case might have been thought to be one of chlorosis, pernicious anæmia, or malignancy. My own view was that the case was one of chlorosis associated with venous thrombosis, and the blood showed a considerable deficiency of hæmoglobin, but a further examination made by Dr. Scott showed a considerable increase in the white corpuscles and a relative increase of neutrophile cells which suggest a secondary anæmia.

GENERAL INFIRMARY, WORCESTER.

A CASE OF CHRONIC INTUSSUSCEPTION DUE TO MULTIPLE POLYPI OF THE INTESTINE.

(Under the care of Dr. MABYN READ.)

FOR the notes of the case we are indebted to Dr. P. G. Harvey, house physician.

An unmarried woman, aged 22 years, was admitted for the second time to the General Infirmary, Worcester, under the care of Dr. Mabyn Read, on June 4th, 1903, with the following history. On May 20th, 1903, she was sick and had some pain in the abdomen, chiefly on the left side. After her bowels had acted "something came down" from the rectum and could not be replaced. This protrusion was seen by a medical man who kindly informed Dr. Harvey that it was a large prolapse of the rectum which was covered with numerous dark, exceedingly brittle stalked polypi, many of which broke off on replacing the prolapse but some were returned with it. The next day she was admitted to a surgical ward at the Worcester Infirmary and was examined and kept under observation for a week, but nothing abnormal being found and no symptoms occurring she was discharged. No polypus was felt. On May 31st she began vomiting again and had abdominal pain; the bowels acted regularly and frequently. This continued until admission, the sickness tending to get worse. With regard to her past history the patient had never been strong and had attended at the Worcester Dispensary for some six or seven years for loss of flesh. She had had no attacks like the present one before May.

On admission the patient was very emaciated and looked ill. The tongue was dry, red, and coated with a dry-brown fur. The temperature was 99·2° F. and the pulse was 100. As to the chest, the heart and lungs were normal. The liver dulness was obscured by resonance from the abdomen. The abdomen was distended, chiefly on the left side and under the costal arch. Active peristalsis was observed in the distended portion of the abdomen. There were very little tenderness and no rigidity of the abdomen. Pain was worse when the bowel contracted. From its situation the distended and contracting bowel was supposed to be the transverse and descending colon. Per rectum the mucous membrane felt relaxed; nothing abnormal was felt in the rectum. In Douglas's pouch a tender moveable body was felt which was supposed to be the body of the uterus from its size and position. (The patient was menstruating at the time.) The urine was of specific gravity 1026 and acid; there was nothing abnormal. The case was looked on as probably one of a polypus high up in the sigmoid flexure. The patient was put on a fluid diet and had fomentations applied to the abdomen and a bismuth mixture to try to check the vomiting. On June 5th she was sick twice during the night; she vomited curdled milk. Milk was stopped and meat essence and broth were given. She was sick once after the change of diet. There were much less pain and distension of the abdomen and peristalsis was not observed. The bowels acted well after an enema. On the 6th, 7th, and 8th the patient continued to improve. There was no sickness and there were less pain and distension of the abdomen but slight tenderness was present in the right iliac region. On the 10th the patient was again sick and it was decided to examine her under an anæsthetic but nothing was found in the abdomen or the rectum. Her general condition greatly improved, the bowels acted naturally, and on one occasion she had eight motions in the 24 hours (July 4th). On the 7th, when the rectum was again examined, clear mucus was found on the finger after examination. On the 11th she was again examined under an anæsthetic but nothing further was discovered, a good deal of clear mucus being observed. The rectum was washed out daily with two pints of boric lotion, a good deal of shreddy mucus in flakes of about two inches in length being returned. By Sept. 23rd she had considerably improved but had had six attacks of sickness during the two months; the shortest lasted one day and the longest four days. The vomited material was chiefly food but on one occasion contained bile. The abdomen was never distended to the extent it was on admission but there were decided fulness and some tenderness on the left side. An indistinct band was felt on the 23rd extending across the left side of the brim of the pelvis and it was thought it might be due to an adhesion. She had so far improved as to be able to take

ordinary food and to get out of doors. On Oct. 6th she had an attack rather more severe than usual. The abdomen became a good deal more distended and, as on admission, the distension was chiefly on the left side, where a coil of gut in active peristalsis was observed. The patient was put on nutrient enemata of peptonised milk and the rectum was washed out every morning, fæcal material and some shreddy mucus being obtained. Nothing was felt by the rectum. On the 9th the vomit was fæcal in smell and dark brown in colour. Her condition was getting steadily worse and she was seen in consultation by one of the honorary surgeons at 1 P.M. and it was decided that she was suffering from subacute obstruction probably due to a polypus in the sigmoid flexure or perhaps to the band which had been noted on Sept. 23rd. If her symptoms did not improve it was arranged to perform a laparotomy, but it was decided to wait a little longer as she had had several attacks before and to operate during a quiescent period if possible. At 5 P.M. she returned a large quantity of peptonised milk representing three or four nutrient enemata from the rectum and became very collapsed. Dr. Read was summoned and it was decided to operate at once but the collapse increased and she died at 6 30.

Necropsy.—The post-mortem examination was held on Oct. 11th. On opening the abdomen the first thing to attract attention was a coil of greatly distended *small* intestine lying in the left flank, to which were adherent omentum and some collapsed small intestine. On separating the adhesions some pus was found which was confined to the left side by a band of omentum which was adherent to the pubes and the brim of the pelvis. A small rupture was found in the *small* intestine through which an intussusception could be seen. After removing the intestines and opening them a large polypus was found near the duodeno-jejunal junction; about two feet down the jejunum was the intussusception which was about six inches in length, at the apex of which was a large polypus. There was a smaller polypus about half way up the entering layer of the intussusception. There was a large collection of polypi in the cæcum and lower part of the ascending colon and there were three smaller ones in the transverse and upper part of the descending colon. No polypi were found in the sigmoid flexure or rectum.

Remarks by Dr. HARVEY.—The above case may be of interest on account of the length of time the illness lasted, the indefinite and in fact somewhat misleading nature of the symptoms, and the unusual condition found post mortem. I am greatly indebted to Dr. Read for permission to publish the notes of this case.

Medical Societies.

CHELSEA CLINICAL SOCIETY.

Discussion on "Internal Secretion" in Disease and in Treatment.

THE annual clinical debate of this society was held at the Chelsea Dispensary, Manor-street, King's-road, London, on March 8th, Dr. T. VINCENT DICKINSON, the President, being in the chair.

Sir LAUDER BRUNTON, in opening the discussion, said that he thought it better to take a general view of the subject. He would mention that one of the first experiments on the subject of the excretion of ferments by bacteria was one by Dr. A. Macfadyen and himself, in which they found that not only did bacilli excrete peptonising ferments but that those bacilli showed the power of adapting the secretion of ferment to the medium upon which they grew in almost exactly the same way as the pancreas of a dog will adapt itself to the food upon which the animal had fed, secreting a glycogenic ferment when the animal was fed upon starch and secreting a ferment which would split up fats when the animal was fed upon fats. It would seem from recent researches that the ferments which were excreted into the intestine after their absorption met with certain anti-bodies and again became recombined to form zymogens. They did not know what these anti-bodies were but it would sometimes seem that those anti bodies might really be active ferments and that in the case of the pancreas, while it was pouring out into the duodenum a secretion which would convert starch into sugar, it was pouring out through the lymphatics into the blood another ferment which would destroy that very sugar and allow it to undergo combustion in the body. They had there, then, in the pancreas apparently a double secretion, one of which they might term the external secretion, as distinguished from an internal secretion where the fluid from the gland was not poured out upon a free surface but into the blood. Apparently those two secretions were dependent upon different parts of the pancreas. In the case of diabetes they seemed to have a disease depending upon failure of the internal secretion but his own experiments to supply a glycolytic ferment in cases of diabetes although not entire failures were comparative failures. The most striking of all the internal secretions, however, was that of the thyroid gland. He had occasion once to see nearly all the symptoms of exophthalmic goitre with the exception of the enlargement of the thyroid and the protrusion of the eyeball produced by an overdose and overlong continuance of thyroid administration for myxœdema. Most of the symptoms of exophthalmic goitre were due to actual poisoning by the internal secretion. In cases of exophthalmic goitre he used to depend very much upon bromides and upon lime in one form or another, and sometimes he seemed to see good results from those; but the results were not so well marked or pronounced as one would have liked. He had since tried extract of suprarenal capsule and that he thought produced a certain amount of benefit. He had tried thymus but his results had not been very good with that either. Extract of suprarenal capsule had an almost entirely different action upon the blood-vessels and upon the heart from the extract of thyroid. The latter was one of the most marked vaso-dilators he knew and it had been exceedingly useful where they had the fingers becoming dead in winter time and where the patients suffered much from chilblains. By putting them upon small doses of thyroid extract they got the vessels of the fingers dilated and chilblains thus prevented. Extract of suprarenal capsule contracted the vessels to an enormous extent and also stimulated the heart; so between the two they got the blood pressure very much raised indeed; in fact they knew no drug which would raise the blood pressure to such an extent as suprarenal capsule, except nicotine, and one did not know at present whether the nicotine which people took in smoking might not be an adjunct to the action of the suprarenal capsules in keeping up the blood pressure and so keeping up the general tension and power of the individuals. But another question arose in connexion with the agitation in relation to youthful smoking. If suprarenal extract counteracted the effects of thyroid might not nicotine to a certain extent? One of the uses of thyroid was to increase growth. Its effects were more marked in cretinoid dwarfs than in others but he had seen a marked growth following in a child who was not cretinoid by the administration of thyroid extract. Probably it would be said that that was *post* and not *propter hoc*. But he thought it was *propter hoc*. And the idea occurred to him that it was possible that juvenile smoking might have the effect of counteracting the effect of some of the glands which would tend to cause growth and thus to stunt the growth of the child. But it was the pituitary body which seemed to be the gland which regulated the growth of the child and disease of that was often followed by acromegaly and also by the enormous growth of the patient, so that he became a giant. Ovarian extract had been used, especially in cases of women at the menopause, and he thought he had seen sometimes a certain amount of benefit by giving ovarian extract in cases where women were complaining very much of the flushes of heat which were so common at the menopause; but even with that he had not obtained any very marked results. The kidney was another organ which seemed to have an internal secretion as well as an external one. With increased knowledge of the enzymes formed by the glands, of their reabsorption, the changes they underwent, and of how to get both enzymes and zymogens if possible, and if they could know how to split up those zymogens in the blood afterwards, then their powers of treating disease would be enormously increased.

Sir VICTOR HORSLEY said that after all the work which had been done on the thyroid gland, and after all the well-known clinical results obtained by the use of thyroid extract in a disease like myxœdema, they had rather got the idea clinically that when they considered an internal secretion and its alterations by disease they thought only of its banishment. With regard to the thyroid gland at the present time the idea of the internal secretion of that gland

being altered by disease was simply that it came to an end. There was not merely that negative side of internal secretion, the positive side was as important clinically. The internal secreting glands when diseased were no longer able to furnish the useful ingoing ferment and in the process of becoming diseased poured into the circulation not merely a healthy ferment but aberrant and poisonous substances. In certain well-known conditions like simple goitre there was ample clinical evidence of such poisoning going on. The thyroid adjusted itself to the requirements of the organism chemically and prevention of that was seen in disease, especially in the formation of new growths. Exophthalmic goitre was a condition in which the thyroid gland was responsible for certain nerve symptoms and the clinical treatment of exophthalmic goitre at present was apparently based upon an attempt to treat the external secretion of the gland. There were few cases of exophthalmic goitre which could not be cured by systematic treatment with the faradic current carried out persistently. Many cases had been brought to him for operation in which operation had been avoided by the energetic use of the faradic current, not the constant current, as was sometimes used by mistake. Supposing the electrical treatment not to have produced a beneficial effect it was curious that in exophthalmic goitre the division of the isthmus by a surgical operation might stop the disease. There was one other condition in relation to the operative treatment of exophthalmic goitre which brought them to a very interesting conclusion with regard to internal secretion. When it was first proposed to operate in exophthalmic goitre people immediately took it up without considering the cases or without knowing exactly why they were doing the operation and the result was that a large number of deaths followed the operation. In such cases if most of the thyroid gland was removed the patient was practically brought to the same condition as a carnivorous animal from which the thyroid gland had been suddenly removed and in which the temperature rapidly rose if it were young, with tremors, dyspnœa, and death. Such was exactly the same clinical picture in cases of rapid death after removal of one lateral lobe of the thyroid gland in exophthalmic goitre. That was a proof in itself of two different processes in the gland, the absence of the internal secretions and also the existence of the toxic condition. In cases of adenoma of the thyroid gland when the condition was advanced there would be found symptoms of toxicity. The patients were being poisoned precisely in the same way as in exophthalmic cases, only in a much less degree. At the present time thyroid extract was frequently given in goitre. Thyroid extract given internally could not have any supplementation effect in the case where the new tissues were poisoning the patient already. On the contrary the patients often said it made them much worse. In parenchymatous goitre thyroid extract produced a beneficial effect for some time—it did not cure it or avert an operation ultimately but it made the patient better and it was easy to understand why it should. By giving the thyroid extract they were doing a judicious thing—they were supplementing the failure to the patient of his thyroid gland and providing against his athyroidism. And so markedly was that the case that where patients had not been treated in that way it was advantageous to treat them so for a certain time before operating, for by that means the athyroidal condition was reduced. They were familiar now with the fact that in malignant disease of the thyroid gland, however localised, it was absolutely essential to remove the whole gland. In those cases, although the gland was completely removed, the patients required exceedingly little thyroid extract to keep them in health. With an ordinary myxœdema patient the custom was to give thyroid extract daily but a carcinoma case did not require it. The thyroid gland which was such an extremely important organ in early life for the growth and development of the body became of very little importance every year after the age of 40 was passed, and most carcinomata of the thyroid gland began after the forty-fifth year. In other words, it was another proof of the quantitative relationship between that internal secretion and the needs of the body. Sir Victor Horsley concluded by suggesting that clinically they ought to look more than they did for the positive conditions accompanying aberrant internal secretion, for the poisonings which accompanied these secretions, quite as much as they looked for the loss of normal useful internal secretion.

Dr. H. D. ROLLESTON said that the theoretical consideration which naturally arose was the possibility that some of the diseases which were assumed to be due to disturbance of the normal internal secretion of one ductless gland, such as exophthalmic goitre, acromegaly, and possibly others, were more complex in their nature. In acromegaly glycosuria was not uncommon and had been shown to depend on changes in the pancreas; were those pancreatic changes secondary, like the splanchnomegaly sometimes seen in that disease? Or were they two concomitant changes? Acromegaly might be combined with exophthalmic goitre and there was some superficial resemblance between acromegaly and myxœdema. It might be argued that acromegaly was the result of a disturbance of the chemicophysiological equilibrium maintained in health between the internal secretions of those glands. An anatomical fact which suggested that there was some inter-relation between the diseases due to abnormal internal secretions was that the thymus gland, which underwent complete atrophy before adult life, was almost always persistent or rejuvenated in exophthalmic goitre and sometimes in myxœdema and in acromegaly. The want of success in the treatment of exophthalmic goitre and acromegaly might possibly depend on the fact that two or more glands instead of one only were in each case in an abnormal condition. In the last part of his remarks Dr. Rolleston referred to the therapeutic uses of suprarenal extract. Schäfer and Oliver had shown that the active principle was not destroyed by gastric juice *in vitro* and there was no doubt that when given by the mouth to patients with Addison's disease it raised the blood pressure. It was remarkable that when taken by healthy persons it did not raise the blood pressure. Preparations of the active principle were now available for hypodermic injection and the method was probably more effectual than administration by the mouth. The effect of treatment of Addison's disease by suprarenal extract or its active principle —epinephrin—was disappointing as compared with the effects of thyroid extract in myxœdema. Improvement often occurred temporarily, but it was only in rare instances that the good effect was maintained and that anything like a cure was effected. In Adams's critical analysis of 105 cases of Addison's disease treated by suprarenal extract, the treatment had no effect in 49 cases, 33 cases improved coincidently with treatment, in 16 cases permanent benefit resulted, and in seven cases alarming or fatal results were produced by the treatment. Although suprarenal extract was not a marked success in Addison's disease it had been successfully employed as a local application to constrict the peripheral vessels in operations on mucous surfaces, such as the nose, eyes, &c., in capillary oozing, in hæmophilia, and in epistaxis. Crile had advocated its use in cases of pure surgical shock as a most satisfactory method of raising the blood pressure; he recommended that it should be injected intravenously in large quantities of salt solution, continuously and slowly.

Dr. A. E. WRIGHT said the secretions that he would speak about were those which were not elaborated by any gland. The substances he proposed to discuss were those which they all required daily. They were substances of which they did not know where they were created in the body, but they were present in considerable quantities in the blood. The most marked type of internal secretion was diphtheria antitoxin. All the protective substances involved in the cure of disease were to be regarded from the point of view of internal secretions. The blood of a man affected with acne was defective in a certain internal secretion. In a patient suffering from acne who was defective in his protective substances against that condition in the blood they did not know where to get those substances which were required. If they took a person who had recovered from disease they would find that he had got the power of elaborating the internal secretions required and though they could not supplement them they could if they knew the laws by which they were produced help the production of those substances in patients. He (Dr. Wright) might be considered venturesome if he said that there was no case of acne which could not be cured in a practically short time, but in his own experience there had not been one case which had not been curable, though his experience was only some 36 cases. There had not been one of them in which he could not produce enough internal secretion to kill off the staphylococcus. Patients with tuberculosis recovered if they produced enough of the internal secretion to render their bodies uninhabitable by the tubercle bacillus, and a serum had been used for the purpose of supplying this. The patient was put into the open air in the hope that he would elaborate them.

Broadly speaking, in a disease of chronic character inclined to reinvade people, which was not immediately dangerous to life, there was an interval during which the secreting tissues in the body could be induced to secrete the substances required. Evidence could be got that they had been obtained, and in almost all cases, clinically, benefit would result. The effect of one inoculation in any disease was not sufficient to increase the amount of protective substances in the blood so as to change the whole nature of anybody. Ordinary inoculation was best carried out by a series of repeated doses, and they had to know the law which governed those repeated doses to secure success. The object of all inoculations was to produce by a series of repeated doses an internal secretion by accumulative effects. When they dealt with internal secretions it should not be simply a matter of thyroid or acromegaly, but it should come home as a daily thing in their lives that chronic or local infection was a symptom of defective internal secretions, and that those secretions could be elaborated in the body when there were youth, strength, and health by the application of a stimulant given in the proper quantities and at proper intervals and given always in the light of careful and systematic examination of the blood.

The discussion was then adjourned.

MEDICAL SOCIETY OF LONDON.

Discussion on Acute Intestinal Obstruction.

A MEETING of this society was held on March 14th, Dr. F. DE HAVILLAND HALL, the President, being in the chair.

Dr. W. HALE WHITE opened a discussion on Acute Intestinal Obstruction by communicating a paper on the early diagnosis of the condition which is published at p. 791 of the present issue of THE LANCET.

Mr. A. E. BARKER confined his remarks to an outline of the principles of surgical treatment in intestinal obstruction and to the most important details. He emphasised the fact that the condition under discussion was made up of three preponderating factors: (1) mechanical or anatomical; (2) physical; and (3) vital. It was pointed out that the mechanical factors *per se* were not dangerous if promptly relieved, as could be learned by the results of operations for strangulated hernia at an early stage. The physical factors induced by strangulation were certain to come on sooner or later—i.e., congestion of the retained bowel, thrombosis, and effusion, and they became very serious if neglected. But in the local and general vital changes due to the action of the toxins stored up under pressure in the bowel above the point of arrest lay the greatest dangers to the patient, whether operated on or not. In an advanced case of obstruction therefore the quick evacuation of this stored-up putrid material must be provided for either by artificial anus or, as preferred by Mr. Barker, by resection of several feet of bowel above the constriction and anastomosis of the remaining parts. The reasoning in support of this course was only lightly touched on, having been already published in THE LANCET of May 30th (p. 1495) and June 6th (p. 1576), 1903. Illustrative cases were quoted, however, and some specimens were shown. A sketch of the chief details to be observed in a case of acute intestinal obstruction was given and some remarks were made upon after treatment and complications. The stomach should be emptied, by stomach-tube if necessary, and the mouth washed out with antiseptics, warm brandy-and-water administered by the mouth, and a saline solution injected per rectum. Chemical germicides were, in Mr. Barker's experience, best avoided but thorough asepsis should be employed. Local analgesia, excepting perhaps towards the end of an operation, was to be preferred to generalised anæsthesia.

The PRESIDENT alluded to a case resembling renal colic which was about to be operated on for intestinal obstruction and in which he prescribed warmth to the abdomen and rest and the patient duly recovered. The responsibility of the physician in such cases was very great. Some observers had referred to leucocytosis as being a characteristic of intestinal obstruction as well as of appendicitis. Urgency of symptoms was an indication of the amount of constriction rather than its position as taught by older authors.

Mr. C. CARTER BRAINE was very interested in Mr. Barker's views on the use of local analgesia. He had often had an anxious time in the administration of general anæsthesia. It was a very good plan to wash out the stomach repeatedly, since there was a constant tendency to regurgitation of stercoraceous material.

Dr. J. VINCENT BELL (Rochester) referred to cases of obstruction by a volvulus and by bands of adhesion.

Mr. H. J. WARING referred to the diagnosis of true acute intestinal obstruction from hysteria. The resemblance was often very great, the character of the pulse being a valuable aid. He mentioned a case of hysteria which had been operated on by four eminent surgeons at different times for obstruction of the bowels. It was of importance to examine per rectum before diagnosing the obstruction or its cause.

Dr. HALE WHITE and Mr. BARKER replied.

PATHOLOGICAL SOCIETY OF LONDON.

Recent Experimental Work on Bacillary Dysentery.—Deep Chromatin Staining in Malaria.—An Unusual Anatomical Lesion.

A MEETING of this society was held on March 15th at the Royal Army Medical College, Victoria embankment, Lieutenant-Colonel R. H. FIRTH, R.A.M.C., being in the chair.

Lieutenant-Colonel FIRTH communicated notes on some Recent Experimental Work concerning Bacillary Dysentery, in which he explained that while there could be no doubt as to the existence of bacilli in the intestinal dejecta from cases of acute dysentery which were capable of differentiation from the common colon and enteric micro-organisms all the bacilli which had been described as being the specific cause of bacillary dysentery were probably not so. In the course of a detailed examination of a considerable number of these dysentery bacilli, derived from a variety of sources, it was possible to divide them into those which were pathogenic and those which were not. Pathogenicity had been determined in the rabbit and although both varieties presented morphological resemblances in common, the distinctive cultural features of the non-pathogenic group seemed to be an ability to split maltose, galactose, and mannite with the formation of acid but without production of gas, also to produce indol. These characteristics were wanting in the pathogenic varieties. The non-pathogenic forms were apparently the "pseudo-dysentery bacilli" of some authors but whether they represented degraded or transitional forms of the pathogenic type he was unable to say. As representative of the true bacilli of dysentery he mentioned the organisms associated with the names of Shiga, Vaillard, and Kruse. After demonstrating the cultural reactions of the two types he pointed out that from the point of view of their agglutination reactions the two groups presented marked differences; whereas the serum derived from animals immunised with one or other of the pathogenic varieties was capable of reacting upon the other members of the same group in high dilutions, it had little or no effect upon those of the non-pathogenic group; moreover, there was no concordant interaction between members of this latter group and sera resulting from immunisation with similar non-pathogenic strains. The same experiments had shown that in the rabbit, although a serum had developed marked agglutinating functions, it had no antitoxic action. While in rabbits no ill effects followed when the dysentery organisms or their toxins were administered either by the mouth or by direct injection into the intestinal tract, as exposed by a preliminary laparotomy, lesions characteristic of those found in human dysentery could be produced by subcutaneous inoculation. Examples of these were exhibited showing ulcerated and sloughing areas in the cæcum and large intestine; also sections of some of the affected parts in which the bacillus seemed to be affecting primarily the submucous layer of the bowel. The lesions could be caused not only by injections of living bacilli but also by cultures killed by heating to 60° C for half an hour; these same effects followed inoculations with a sterile filtrate derived from a four-day-old broth culture and also with the filtrate obtained from a sterile autolysed maceration in water of bacilli which had been killed by chloroform. The existence of toxic broth filtrates had been denied by some, but provided care were taken to see that the broth in which the dysentery bacilli were grown was definitely alkaline no difficulty was experienced in obtaining a highly toxic filtrate. The dysentery bacilli and the toxic substances elaborated by, or contained in, their bodies appeared to have a selective affinity for the cæcum and large

bowel, as it was remarkable that in all these cases of dysentery the blood and organs and mesenteric glands were sterile. Recognising the apparent elective affinity which the pathogenic strains had for certain parts of the intestinal tract when injected subcutaneously, and also the failure to bring about the same effects when the bacilli or their toxins were introduced directly into the alimentary canal, some interesting observations had been made as to the possibility of there being some toxin-fixing or neutralising substance in the epithelia of the intestinal tract of the rabbit. Emulsions in salt solution were made under antiseptic precautions of a virulent culture of the dysentery bacilli with tissues from various organs of a healthy rabbit, such as the spleen, liver, kidney, voluntary muscle, and the epithelium scraped from some ten inches of the cæcum and large bowel. After centrifugalisation five cubic centimetres of the clear liquid were injected into five rabbits, a sixth being taken for a control injection with an emulsion of the bacilli alone. The control died on the third day, the rabbits which had received the bacilli with emulsions of spleen, liver, kidney, and muscle died on the fourth day with characteristic lesions, while the animal inoculated with the mixture of bacilli and emulsified intestinal epithelia survived until the eighth day. In a second experiment the antitoxic influence of the intestinal epithelia was more marked, the animal surviving. Some facts had been established as to the viability of these dysentery organisms outside the body, indicating that, desiccated in soil or on rags, the bacilli could survive some 21 days, while from tap water kept at 22° C. they were recoverable up to 55 days and at 37° C. up to 28 days. If spread on ordinary bread these bacilli survived a week. The inquiry justified the conclusion that the dysentery bacilli were a specific group capable of producing definite lesions in the cæcum and large bowel of varying degrees of severity, such as catarrh, simple petechial patches, punctiform ulcers, large erosions, and even complete sloughing of large areas of the mucous membrane. In accordance with these lesions the clinical entities called dysentery produced by these pathogenic bacilli represented a group rather than a single class of cases and might range from the infective diarrhœas of infants and adults through the various degrees of ileo-colitis to the typical acute dysentery of camps and the tropics. There was still something to be done to explain the precise antecedents essential to infection, as, arguing from these experiments on the rabbit, it was difficult to explain the epidemiological facts by the orthodox channels of polluted drink and food only, without premising some condition which antecedently either inhibited or lessened the apparently normal defence against infection inherent in the intestinal mucous membrane.

Major W. B. LEISHMAN, R.A.M.C., read a communication on Deep Chromatin Staining in Malaria. After alluding to the great advance in knowledge of the structure and development of the parasites of malaria due to the specific colouration of the chromatin by the method of Romanowsky and its numerous modifications, Major Leishman proceeded to describe the effects of deep chromatin staining on the different varieties of malaria parasites, with special reference to the changes which this intense staining demonstrated in the red corpuscles infected by these parasites. By means of diagrams and stained blood films Schüffner's dots in the cells invaded by benign tertian parasites were demonstrated; it was pointed out that a very moderate grade of intensity of staining sufficed to show them and that their presence was constant and was diagnostic of this variety. In quartan malaria, on the other hand, he, in common with other observers, had failed to demonstrate any changes in the red cells by the most intense staining. As regards malignant tertian or tropical malaria, the work of Stephens and Christophers, of Maurer, and of Argutinsky was described and contrasted and stained films were shown demonstrating, first, the dots in the red cells infected by young malignant schizonts; and secondly, the deeply stained capsules surrounding the mature gametes or crescents, as described and figured by Maurer. In view of the apparently contradictory results obtained by Maurer and Argutinsky and of his own failure, except in a few instances, to demonstrate Maurer's dots and capsules, Major Leishman suggested that these discrepancies might be due to there being more than one variety of tropical or crescent malaria and that the differentiation of this fever into malignant tertian and quotidian, although largely abandoned, except by the Italian and American schools, might prove to be correct. The existence of two or more distinct species of malignant parasites would account for the difference in the results obtained, and he suggested that the systematic investigation of these malignant parasites by means of deep Romanowsky staining should be undertaken with a view to settle this disputed point. In showing some sketches of the capsulated crescents Major Leishman drew attention to some forms which appeared to him interesting as indicating the probable mode of development of the characteristic crescent from a circular intracorpuscular parasite somewhat similar to the gametes of benign tertian and quartan malaria. Specimens were also exhibited of sections of brain from a case of malarial coma to show the effects of Major Leishman's stain as applied to sections.

Dr. T. J. HORDER showed a pathological specimen in which the chief point of interest was a Massive Form of Consolidation of the Left Lung associated with a Small Aneurysm of the Descending Thoracic Aorta. The sac of the aneurysm, of about the size of a large pea, had ulcerated through the wall of the left bronchus, which was found to be much dilated and filled by adherent, laminated blood clot. The surface of the bronchus was also ulcerated. The lung was uniformly affected, the chief changes being great increase in new fibrous tissue and the filling of the alveoli by large endothelial cells and plasma cells. There was no collapse or any broncho-pneumonia. The pleura was much thickened. Microscopic examination of the blood clot showed organisms present; a few could also be demonstrated in the lung. Although the vagus nerve was much compressed no degeneration could be demonstrated in its trunk below the level of the pressure. The patient from whom the specimen was obtained had been suddenly seized with intense dyspnœa, cough, and pain in the chest, but lived eight weeks after this, the chief clinical features being rapidly developing loss of function of the left lung, until this was complete, and quotidian intermittent fever. There was a history of syphilis and examination of the aorta after death showed a condition of syphilitic aortitis. In addition to the naked-eye specimen, lantern slides and microscopical preparations illustrating the case were exhibited.

OPHTHALMOLOGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held on March 10th, Sir ANDERSON CRITCHETT, the Vice-President, being in the chair.

Mr. J. R. LUNN showed an elderly man with Compression of the Retinal Veins by Thickened Arteries in One Eye, the vessels in the other eye showing also some degeneration. A large area above the macular region was occupied by a hæmorrhage. Owing to the serious view of such cases taken by Mr. R. M. Gunn he proposed to bleed the patient, while Mr. E. Nettleship had suggested purging him as well.—Mr. GUNN said that although he looked upon such cases as grave, yet that as in this case there was no albuminuria he thought it rather a favourable one.

Dr. H. B. GRIMSDALE exhibited a man, aged 24 years, who had suffered from Gonorrhœal Ophthalmia a year before, resulting in a dense leucoma in one eye. When light was allowed to shine on to the sound eye the pupil contracted, while the other eye rotated distinctly upwards, and when light was withdrawn the reverse took place, the affected eye rotating downwards. This condition had been previously noticed after head injuries but had not before been described as occurring in such a case as the present one.

Dr. H. L. EASON showed a case of what he took to be a Persistent Hyaloid Artery. The right eye had defective vision and nystagmus. The vessels were seen emerging from the lower border of the disc, one branch running forwards and opening in a funnel-shaped aperture against the ciliary body below the iris. Should it be considered as an inflammatory condition or as a developmental condition—namely, a persistent hyaloid artery?—Mr. E. TREACHER COLLINS saw no reason for doubting that it was really a persistent hyaloid artery and that, in addition, there had been atypical development of the vitreous.

Dr. EASON also showed a patient with Albuminuric Retinitis who, three years before, had acute nephritis, anasarca, and detachment of both retinæ. His general condition had greatly improved and the detachment in both eyes had subsided.

Mr. CLAUD A. WORTH showed a member of a family in whom Congenital Dislocation of the Lens was present in five generations. 24 years before Mr. A. Stanford Morton

had described the family in a paper in the Royal London Ophthalmic Hospital Reports and since then two more members had been born, both with the same condition.—Sir ANDERSON CRITCHETT thought that such a series of cases was most important as bearing on the subject of heredity.—Mr. NETTLESHIP thought that possibly a slight luxation of the lens in young children might account for the high degrees of myopia which were occasionally seen and which did not get worse as time went on.

Dr. A. H. THOMPSON showed a girl, aged 10 years, who had a Congenital Coloboma of the Iris downwards in one eye. Near the periphery of the fundus and well below the macula were a white patch with indefinite edges and a band of healthy choroid crossing it. In view of the condition of the iris Dr. Thompson took it for a coloboma, otherwise he would have been inclined to regard it as a patch of choroidal atrophy. The vision was $\frac{6}{9}$ and the left eye was normal.

Mr. N. BISHOP HARMAN showed a girl, aged five years, with the following Abnormalities: the anterior fontanelle was not closed; a coloboma of each upper lid; a coloboma of the iris and choroid on one side; two dermoids of the globe on the right side; very tortuous retinal vessels; an imperfect mouth; a depression over the sacrum representing the tail (fovea sacralis); and two ears on the right side and four on the left. The child was unable to walk or to say more than a few words.

Dr. A. H. BENNETT showed a girl, aged nine years, who, when first seen in October, 1903, had Keratitis Punctata in the right eye; she was not again seen until she attended as an out-patient under the care of Mr. Claud Worth at the West Ham Hospital on Feb. 18th last. The right eye had been red for a month and the sight had failed without pain. With this eye she could only see hand movements; the vision of the left was $\frac{6}{6}$. The right eye was inflamed with gross, oily-looking patches of keratitis punctata. The iris was yellowish and the pupil was occluded. There were five tuberculous-looking masses growing near the angle of the anterior chamber, varying from the size of a shrivelled barley corn to that of a No. 6 shot. These appeared to be fluffy as though covered with exudation. The eyeball was not tender and there was no fundus reflex. The left eye was normal except for slight ciliary redness. Atropin was applied and hydrargyrum cum creta and syrupus ferri phosphatis compositus were given internally. Two weeks later the exudate had mostly disappeared and small blood-vessels were seen on the surfaces of the growths. The left eye when exhibited showed typical pyramidal keratitis punctata; the vision remained the same; the lungs were healthy but the cervical glands were enlarged. The family history disclosed nothing either specific or tuberculous.

Mr. GUNN showed a drawing of an Eye with Maldevelopment of the Suspensory Ligament. The patient complained of symptoms suggestive of a refractive error, but after the use of atropin the upper edge of the lens, instead of being convex, was, roughly speaking, horizontal. At two or three places some fibres of the suspensory ligament came down and were attached to it, thus giving rise to elevations along this edge. There was also a coloboma of the lens downwards.

CLINICAL SOCIETY OF LONDON.

A Case of Polycythæmia with Enlarged Spleen.—Intracranial Resection of the Second Division of the Fifth Nerve for Neuralgia.—Foreign Body impacted in the Left Bronchus.

A MEETING of this society was held on March 11th, Dr. FREDERICK TAYLOR, the President, being in the chair.

Dr. F. PARKES WEBER and Mr. J. H. WATSON communicated a paper on a case of Chronic Polycythæmia with Enlarged Spleen and probably Disease of the Bone Marrow. The patient was a man, aged 58 years, a native of Holland, who had noticed for the last six or seven years a variable amount of cyanosis in the face and extremities. In 1903 he fractured some ribs and afterwards commenced to have delusions of persecution. The peculiar symptom-complex of chronic cyanosis with splenomegaly and polycythæmia was observed at the German Hospital in the latter part of 1903. At Colney Hatch Asylum, to which he was removed, he remained bodily and mentally feeble and during an attack of greatly increased cyanosis died suddenly on Feb. 4th, 1904. Apart from the mental symptoms the chief features of the case were: chronic cyanosis, not to be accounted for by the condition of the heart and lungs; chronic enlargement of the spleen, though the splenic substance appeared little altered at the necropsy; polycythæmia, the blood containing about double the normal amount of red corpuscles and the hæmoglobin value being about 170 per cent. of the normal; increased arterial blood pressure; extreme distension of the small veins with blood, well seen during life in the retina by ophthalmoscopic examination and after death in the viscera; relative dryness of the skin and tissues in spite of there being an absolute plethora of blood in the blood-vessels; urine diminished in amount, highly coloured, and containing a little albumin; frequent digestive disturbance and chronic constipation; tendency to vertigo and to feeling of prostration; and changes discovered after death in the bone marrow of the shafts of the long bones, the red transformation and disappearance of fat indicating doubtless increased activity in the production of blood corpuscles. Dr. Weber and Mr. Watson thought that injuries to bones might increase the polycythæmia (1) by exciting the bone marrow to increased activity, and (2) by rendering rest indoors necessary and thus diminishing the destruction of red blood corpuscles. In the treatment of cases drugs (such as iron compounds) and foods supposed to increase the erythrocyte-forming functions of the bone marrow ought as far as possible to be avoided. A permanent increase of the osmotic tension of the blood would probably account for the main symptoms of the case, but the presence of such increased osmotic tension could only be confirmed or negatived by the investigation of similar cases. By experiments in Professor J. McFadyean's laboratory with fresh horse's blood, in which coagulation had been prevented by the addition of potassium citrate, Dr. Weber and Mr. Watson, using glass thermometer tubing, had succeeded in proving that, other conditions being similar, increase in the proportion of corpuscles to plasma decidedly raised the "viscosity" of blood.—Dr. NORMAN DALTON inquired if any of the ductless glands in the body were similarly enlarged.—Dr. HERBERT S. FRENCH remarked that if the disease was due to an excessive activity of the bone marrow he would have thought that the oxidation of the tissues would have been rendered thereby easier, whereas, on the contrary, cyanosis was one of the most prominent features. This seemed to suggest that the fault lay in the tissues themselves. He thought that experiments upon the comparative tensions of the carbonic acid and oxygen in the expired air in such a case would be valuable.—Mr. LEONARD S. DUDGEON asked if the blood from the small vessels had been examined as well as that from the tissues. He referred to the condition of the bone marrow, which was of a red colour, in a case of congenital heart disease accompanied by cyanosis which he had examined at the East London Hospital for Children.—Dr. W. PASTEUR asked if any thrombosis were present in Dr. Weber's case, as he had met with this condition in two cases of extreme plethora, both of whom died from pulmonary thrombosis at the age of 15 years.—Dr. J. W. RUSSELL (Birmingham) referred to a similar case which he had seen where the spleen was considerably enlarged before any cyanosis appeared. He was also struck with the extreme degree of asthenia present.—The PRESIDENT inquired whether the arteries in the retina were enlarged as well as the veins.—Dr. WEBER, in replying, said that the spleen in these cases might also be regarded as a manometer of the capillary circulation.

Mr. JONATHAN HUTCHINSON, jun., read notes of a case in which he had performed Intracranial Resection of the Second Division of the Fifth Nerve for Epileptiform Neuralgia. The patient had remained free from pain at the end of a year after the operation. The method adopted was that of trephining the temporal fossa, after which the trunk of the superior maxillary division of the fifth nerve was exposed and about half an inch was resected.—Mr. STANLEY BOYD mentioned the case of a woman, aged 69 years, in whom he had performed a somewhat similar operation for intractable neuralgia. In this case some recurrence of the pain took place after the end of the year, though to a much slighter extent than before the operation.

Dr. W. PASTEUR and Mr. T. H. KELLOCK communicated a case of Foreign Body impacted in the Left Bronchus. The foreign body, which was a glass stopper, was removed by operation. An account of the case will be found at p. 795 of our present issue.—The PRESIDENT referred to a case in which pulmonary symptoms were present resembling those of tuberculosis, insomuch that the patient was sent on a sea voyage. One day, however, he expectorated a little blood

and a piece of broken tooth, after which the chest trouble which had persisted for some months, disappeared.—Mr. GEORGE EASTES remarked upon the value of inversion in these cases, especially when the foreign body was almost on the point of coming up but was sucked back again by inspiration.—Mr. G. H. MAKINS said that glass objects sometimes threw definite shadows on the screen. He recalled a case of great dyspnœa due to a suspected foreign body in which the cause of death was found to be obstruction due to a caseating bronchial gland.—Mr. HUTCHINSON, jun., remarked that the glass stopper, though to all appearances clean, was probably virulently septic, hence the formation of pus in the present case. He agreed that the flexible silver-wire loop often succeeded in extracting foreign bodies when all other means had failed.—Dr. PASTEUR and Mr. KELLOCK replied.

OBSTETRICAL SOCIETY OF LONDON.

Exhibition of Specimens.—The Site of Impregnation.—Abdominal Hysterectomy.

A MEETING of this society was held on March 2nd, Dr. EDWARD MALINS, the President, being in the chair.

Dr. M. HANDFIELD-JONES showed two specimens of Unruptured Tubal Gestation, both at about the seventh week. In one case death had occurred owing to severe hæmorrhage which had poured out from the open end of the tube. In the other cases only a couple of drachms of blood had escaped into the peritoneal cavity. In both cases much blood-clot was found in the distended tube surrounding the ovum.

Mr. HARRISON CRIPPS and Dr. HERBERT WILLIAMSON described two cases involving the question of the Site of Impregnation. In the first case, after complete removal of the right ovary gestation subsequently occurred in the right tube. There were two possible explanations of this phenomenon—namely, (1) the presence of an accessory ovary on the right side; and (2) external migration of the ovum. These two possibilities were discussed in some detail and the conclusion arrived at was that external migration of the ovum was the more probable. Two similar cases recorded in the literature were quoted. In the second case a patient became pregnant after both Fallopian tubes had been ligatured; to prevent subsequent conception the abdomen was reopened and a portion of each tube was excised. In spite of this the patient again became pregnant. Similar cases from the literature were quoted and the manner in which the ovum traversed the distended tube was discussed. The bearing of these two cases upon the etiology of tubal gestation was briefly indicated.—Mr. ALBAN H. G. DORAN observed that in respect to Case 1 he considered that the existence of ovarian tissue on the same side as the Fallopian tube fully explained the subsequent pregnancy. External migration seemed to him less probable. In regard to Case 2 it was not necessary to assume that the continuity of the entire canal of the partially excised tube must be restored before the tube could resume its functions. These two opinions were supported by the published reports of authentic cases of pregnancy after double ovariotomy. Mr. Doran removed a cyst of the right ovary 14 years after the left had been amputated for cystic disease by Dr. Robert Barnes and noted complete atrophy of the pedicle on the left side. Yet the patient bore a child to term two years later. The remains of the right tube and a trace of ovarian tissue on the right side proved sufficient to allow of impregnation; external migration was not possible. Stansbury-Sutton, Baldwin, S. C. Gordon, M. M. Morris, and Anderson Robertson reported cases where both ovaries and tubes were amputated for cystic or inflammatory disease, yet the patients bore children afterwards. The stump of one tube had become patent (ligatures seldom closed mucous canals securely) and thus an ovum was conveyed from ovarian tissue to the uterine cavity. It followed that in partial excision of the tube for the induction of sterility restored patency of the uterine portion was sufficient to defeat the operator's aims.—Dr. WILLIAMSON said that though he appreciated the justice of Mr. Doran's criticism in this particular case he was still in favour of external migration of the ovum.—Dr. G. E HERMAN said that there was abundant evidence that the ovum might traverse the peritoneum from one ovary to the opposite tube. There was also some evidence that an ovum might traverse the uterus and get from one tube into the other. Knowing that ligature of the tube did not insure sterility he had endeavoured to sterilise patients after Cæsarean section by removing the tubes altogether, tying the stumps close to the uterine cornu, and so far he had not heard of any patient so treated becoming pregnant.—The PRESIDENT, Dr. A. L. GALABIN, Dr. ROBERT BOXALL, and Dr. C. J. CULLINGWORTH also took part in the discussion.

Dr. FLORENCE N. BOYD described two cases of Abdominal Hysterectomy for Fibroids complicated by Pregnancy. The first patient was 42 years of age and had a hard fibroid in Douglas's pouch, almost filling the pelvis. The tumour tended to fall back and at the end of pregnancy was found to be non-replaceable and very tender; it also obstructed the entry of the presenting vertex into the brim. A Porro-Cæsarean section was performed. After delivery of a living child the uterus and several fibroids were removed by supravaginal amputation. The patient died on the third day with great acceleration of pulse and marked distension of the abdomen. The necropsy showed local peritonitis at the site of adhesion, to which a coil of bowel was attached; cultures from the blood and peritoneal fluid proved sterile. The second patient was 41 years of age, her uterus was removed entire in the fifth month of pregnancy, and she made a good recovery.—Mr. ALBAN DORAN said that in his opinion hysterectomy early in pregnancy was the safest treatment when the fibroid sprang from the posterior part of the inferior uterine segment.—Dr. HERBERT R. SPENCER showed a specimen of Degenerative Fibro-myoma, weighing over 17 pounds, enucleated from the broad ligament nine hours before delivery at term. The child was born dead but seemed quite fresh. It was 21 inches long and weighed 6 pounds 2 ounces. The mother, who was 41 years of age and had had four children previously, made a good recovery. Dr. Spencer said that although he had seen a considerable number of pregnancies complicated with uterine fibroids this was the only case but one in which he had found it necessary to operate during pregnancy. Tumours which encroached on the pelvis in the early months were often drawn up at the end of pregnancy or in labour. He was of opinion that operations in the early months and mutilating operations were by far too frequently performed in cases of fibroids complicating pregnancy. The specimen showed that even at full time a very large tumour might be successfully removed by the operation of myomectomy. He had no doubt that both the cases shown by Mrs. Boyd required operation but thought that in the second case it would have been better to wait and to see whether the pregnancy could not be allowed to continue until the child was viable or even developed to term. Whether the uterus should have been removed in that case was, perhaps, doubtful, but in the case of a pedunculated tumour, such as in one of Mr. Doran's cases, he thought the conservative operation of myomectomy was preferable.—Dr. AMAND J. M. ROUTH spoke strongly against operative interference in the early months of pregnancy unless very urgent symptoms were present, especially as two lives were involved, and all interference must be surgical, myomectomy or hysterectomy, the induction of abortion being unjustifiable for obstructing fibroids.—Dr. CULLINGWORTH and Dr. A. H. N. LEWERS also took part in the discussion.

ULSTER MEDICAL SOCIETY.

The Present Position of Cardiac Therapeutics.—Exhibition of Specimen.

A MEETING of this society was held in the Medical Institute, Belfast, on March 3rd, Dr. JOHN CAMPBELL, the President, being in the chair.

Professor J. A. LINDSAY opened a discussion upon the Present Position of Cardiac Therapeutics. He said that he would deal with the subject from three points of view: (1) the treatment of functional affections of the heart; (2) the treatment of valvular lesions during the stage of complete compensation; and (3) the treatment of valvular affections during the stage of failing compensation. As to functional affections, treatment must have regard to cause, whether nervous, heredity, exhaustion from work, worry or indulgence, too free use of tea, coffee, tobacco, or alcohol, or emotional stress. The regulation of diet and habits was more important than drugs. Hydropathy had only a limited utility

and if pursued energetically it was sometimes disastrous. Change to upland air was useful. The best drugs were probably strychnine or arsenic. The former should not be given if there was much irritability. Anæmia called for iron. The bromides should be used sparingly as in general a tonic was preferable to a sedative regimen. He did not find digitalis or strophanthus valuable in functional affections. As regarded the treatment of valvular affections during the stage of complete compensation, he deprecated any active therapeutics. The patient's habits and occupation required some supervision. His amusements might call for some restriction. The propriety of sanctioning cycling in these cases was doubtful. Tonics might be useful but the special cardiac remedies should be withheld. These patients should be dissuaded, when practicable, from selecting the career of a soldier, sailor, engineer, or politician. The medical profession was not very suitable for persons the subjects of organic valvular disease but some of the special branches might be selected. Law and divinity were permissible careers. Women the subjects of mitral stenosis or aortic regurgitation should be advised against the risks of matrimony. As regards the treatment of valvular affections during the stage of failing compensation, the first question was the due apportionment of rest and exercise. He believed that rest should in all cases have priority when there were active symptoms. Patients sometimes fancied that they could "walk off their shortness of breath," but it was a serious question whether this did not usually mean a blunting of sensibility rather than the rallying of the heart to the strain thrown upon it. Rest could no doubt be abused but it should come first. When some improvement had been obtained the question of graduated exercises or mitigated labour would arise. The diet of these cases should be fairly dry and mainly proteid in character. A sloppy diet or a diet rich in carbohydrate material was in most cases injurious. If much gastric catarrh was present or if the urine was scanty and concentrated solid food might require to be forbidden temporarily. With regard to drugs, he held that there was one sovereign remedy for failing compensation in valvular disease—viz., digitalis—and he regarded all other remedies as of quite minor importance. He thought that they would be more profitably employed in studying the action of digitalis than in trying to find substitutes for it. He advised the use of the remedy by itself and preferably in the form of the powdered leaf. Mercury and iron were the most important drugs to be given in combination with digitalis but he preferred to give the latter drug as a rule without accompaniment, using mercury, iron, or other combination from time to time as the patient's condition and symptoms might require. It was a question whether the "intensive" plan of giving digitalis—viz., in doses of one and a half grains of the powdered leaf every two hours for two or three days—with the view of bringing the patient rapidly under the influence of the drug was a good one. Douglas Powell thought that this plan led to "premature arterial contraction and cumulative effects." It must be remembered that digitalis was a very slow-acting drug. It was useless where an immediate effect was required. He was in the habit of advising occasional intermissions in the use of the drug in the case of a prolonged course of digitalis and he had never seen a well-marked case of cumulative effects. Many patients could take the drug continuously for long periods without ill effects but as a general rule occasional intermissions were desirable. If gastric symptoms proved troublesome digitalis should be suspended for a time and then tried again. In most cases of the continuous exhibition of digitalis an occasional mercurial purge was requisite. In some cases attended by much cyanosis and distension of the right heart the abstraction of a few ounces of blood by leeching was an important adjuvant to the action of digitalis. In senile patients iodide of potassium was sometimes an indispensable addendum to a course of digitalis. Digitalis was most valuable in mitral regurgitation and in aortic regurgitation with secondary mitral reflux. He did not share the fears sometimes expressed regarding the safety and value of digitalis in aortic regurgitation. His experience was that the remedy was of great service in this lesion. In mitral stenosis he had found digitalis disappointing and sometimes injurious, which was not surprising when they reflected that increased force of the systole of the right ventricle might aggravate the patient's sufferings in this lesion. He had been much disappointed with the effects of strophanthus but in some cases of mitral stenosis it might prove more valuable than digitalis. Strychnine was a most valuable remedy in failing compensation but it must be given hypodermically and with a free hand. The usual tonic doses given by the mouth were almost useless. It shone most conspicuously in emergencies—i.e., in circumstances where digitalis was of least service. He had seen some benefit from caffeine. He thought it a waste of time to give convallaria, spartein, cactein, or casca. In the treatment of cardiac insomnia he thought that the moderate use of morphine by hypodermic administration to be much the most important remedy. He could not endorse the high place assigned by some observers to paraldehyde in this condition. He had found it a most uncertain remedy but sometimes it acted well. The question of the use of nitro-glycerine in failing compensation was a most important and much controverted one. He thought that the use of this drug in ordinary cases was bad practice. Its value in anginoid states was, of course, undoubted. The treatment of valvular disease by graduated exercises and by baths was an important question of which much had been heard in recent years. He had paid one visit to Nauheim but could not speak from any considerable experience of the Nauheim methods. He thought that the special form of exercise in cardiac cases was less important than the determination of the prior question whether any given case was one for exercise or for rest. It was a question whether "resistance" exercises possessed any decided advantage over properly regulated exercise in the fresh air upon the flat or on certain inclines, according to the special indications of the individual case. In the successful management of cardiac cases much depended on the docility of the patient, the state of his tissues, and the *savoir faire* of the profession.

In the discussion which followed the following members took part: Sir WILLIAM WHITLA, Dr. J. MCCAW, Dr. R. W. LESLIE, Dr. A. DEMPSEY, Dr. H. L. MCKISACK, Dr. J. S. MORROW, and Dr. D. P. GAUSSEN.

Professor LINDSAY briefly replied.

Dr. DEMPSEY showed a Fibro-myoma of the Uterus successfully removed.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 4th, Dr. Seymour Taylor, the President, being in the chair.—Mr. G. A. Garry Simpson read a paper entitled "Adenoid Growths, When and How to Operate." He recommended breathing exercises for those patients who had a temporary engorgement of some already existing lymphoid tissue due mainly to an attack of acute rhinitis; such cases, however, should be watched for any further developments. Frequently recurring attacks of deafness were strong indications for operative interference and a chronic otitis media would clear up much more rapidly if any existing adenoid growths were removed. Deaf patients with retracted drum membranes were benefited by an operation, provided that the mischief had not existed for too long a period. The nose ought to be examined in every case, because if any obstruction was overlooked the operation would fail to restore nasal respiration. An operation ought to be performed if a child was a habitual mouth-breather. Mr. Simpson had never found that patients suffering from enuresis were benefited by the operation. He preferred to operate with the patient lying on his right side near the edge of the table, with the legs slightly drawn up. The head, which rested on a low pillow, was thus made dependent and no blood or fragments of the growths could enter the larynx. He preferred chloroform for children under ten years of age and nitrous oxide gas and ether for older patients.—Dr. E. Furniss Potter said that he believed the carrying out of breathing exercises as described to be quite inapplicable in private practice and considered that much less worry as well as a more certain result were likely to accrue from the radical operation for removal of the adenoids. Thoroughness of removal was more important than rapidity of operation and thoroughness could not be assured in the short time allowed by "gas only." Nitrous oxide gas followed by ether he considered to be much more satisfactory and if properly administered there need be no anxiety on account of the anæsthetic. With chloroform there was a much larger proportion of cases which gave rise to this anxiety. On the whole the forceps was a more certain and trustworthy instrument than the Gottstein curette although its use entailed a greater expenditure of time.—Mr. Stephen Paget maintained that the risk of increased loss of blood was a serious argument against performing the

operation very deliberately and that there was no positive evidence of the necessity for a protracted operation.—Dr. G. E. Shuttleworth said that breathing exercises were of value in counteracting the habit of mouth-breathing which frequently persisted after adenoid operations, as well as remedial in the milder cases which were not submitted to operation. Such was his experience in the case of feeble-minded children, with whom he was specially conversant and for whom he prescribed these exercises in the upright position as part of their daily school drill.—Dr. J. B. Ball, the President, and Mr. A. B. Kingsford also took part in the discussion.—Mr. Paget read a paper on the Uses of Paraffin in Plastic Surgery. He had employed this method in more than 60 cases of sunken nose and in several cases of prolapse of the bowel. In the treatment of sunken nose it was necessary to avoid attempting to do too much. Everything depended on the state of the skin. If the skin were fairly free, soft, healthy, not scarred, and not adherent the surgeon might anticipate doing a great deal of good and the risk was that he might do harm by trying to do too much good. In cases of prolapse of the bowel a great deal of good could also be done. In operating on the nose the presence of ozæna or of perforation of the septum did not hinder a successful result, provided only that the skin were healthy, free, and fairly abundant.—Dr. Ball said that he had operated in 14 cases of depressed bridge of the nose by this method with satisfactory results. He agreed with Mr. Paget as to the necessity for not injecting too much paraffin. It was better to be under the mark than over it.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—A meeting of this society was held at 11, Chandos-street, London, W., on March 7th, Dr. Thomas Barr, the President, being in the chair.—Mr. A. H. Cheatle opened the resumed discussion on Dr. W. Milligan's paper on the Etiology and Treatment of Labyrinthine Suppuration. In his opinion vertigo was not to be relied on as an indication for operation, nor did erosion of the inner walls of the tympanum and antrum always imply fistular communication between those cavities and the labyrinth. Patients often recovered from these conditions after the complete post-aural operation and without exploration of the labyrinth. On these grounds and because the mastoid operation itself was a long and tiring one he advocated operating in two stages. He thought that the posterior limb of the external semicircular canal was a better way of approaching the labyrinth than either the anterior limb of that canal or the inner wall of the tympanum on account of the proximity of these structures to the facial nerve and bulb of the jugular vein respectively.—Mr. A. L. Whitehead gave an analysis of 691 cases of complicated middle-ear suppuration dealt with by himself and colleagues at the Leeds General Infirmary. There were 27 cases of suppuration of the labyrinth. Of these 14 had facial palsy, five had vertigo, and 11 had no special symptoms; 11 died—six from cerebellar abscess, three from meningitis, and two from marasmus. He cautioned members against too early attempts to remove large sequestra.—Dr. Urban Pritchard supported the views expressed by Mr. Cheatle and suggested the use of a 1 per cent. solution of nitric acid, as practised by himself for many years, for the decalcification of sequestra.—Dr. J. Dundas Grant discussed the difficulty of exploring supposed fistulæ in the labyrinthine walls without producing the very disease the existence of which was feared. Latent labyrinthitis was very difficult to diagnose.—Mr. C. H. Fagge said that in his opinion the posterior limb of the external semicircular canal was the best route for the exploration of the labyrinth.—Mr. Richard Lake referred to the frequent causation of deaf-mutism by necrosis of the labyrinth, especially in scarlet fever.—The President spoke of the intimate relations of the cerebellar fossa and the labyrinth and the consequent frequency of intracranial lesions in labyrinthine suppurations. He also referred to the fallacies of Weber's test for nerve deafness, instancing a case in which the sound of the tuning fork was referred exclusively to the affected ear, although it was proved by necropsy (death occurred from meningitis) that the labyrinth had been destroyed.—Dr. Dundas Grant reported a case of Thrombo-phlebitis of the Sigmoid Sinus in which recovery took place after removal of the suppurating clot from the sinus and without ligation of the internal jugular vein.—Mr. Lake showed four patients with drawings of the Membrana Tympani. One case had herpetic vesicles on the lip, the concha, and the membrana tympani. The other three had aural pain and papules on the membrana tympani which were 'nearly allied to, if not actually, herpes."—Dr. E. Furniss Potter showed a patient with signs of Hereditary Syphilis in whom appreciable improvement of hearing had occurred apparently as the result of treatment by subcutaneous injections of pilocarpine.—Mr. Cheatle and Dr. Pritchard expressed the view that pilocarpine was of less value than repeated blistering behind the ear even in cases of labyrinthine deafness due to hereditary syphilis.—Dr. Peter McBride and Mr. Lake maintained that pilocarpine was useful in labyrinthine deafness.—Dr. Dundas Grant said that pilocarpine was valuable where there was evidence of hyperæmia of the labyrinth but was strongly contra-indicated where the evidence pointed to anæmia.—Various specimens were shown by Dr. Herbert Tilley, Mr. Hugh E Jones, Dr. L. H. Pegler, Mr. Cheatle, and Dr. W. Jobson Horne.—It was announced that the next meeting of the society would be held at Glasgow.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 10th, Dr. John W. Taylor, the President, being in the chair.—Dr. H. Macnaughton Jones exhibited for Dr. T. Gelston Atkins of Cork specimens from two cases treated by Hystero-salpingo-cophorectomy. The first case was one of large bilateral ovarian abscesses and the patient made a good recovery. The other case was one of bilateral papilloma of the ovaries with cancer of the cervix and the woman made a good recovery from the operation but died from tachycardia on the ninth day.—Other specimens were shown by Dr. William Duncan, Dr. J. Inglis Parsons, and Dr. Bedford Fenwick.—Dr. Dudley W. Buxton read a paper on the Vernon-Harcourt Inhaler and Exact Percentage Vapours of Chloroform in Surgical Anæsthesia. He said that pathological and clinical investigation showed that chloroform, like any other powerful drug, was dangerous in proportion to the dose administered, and discussed in detail the experimental researches of various observers on its effects upon the isolated mammalian heart and upon the nervous and vaso-motor systems (Sherrington, Sowton, Waller, Rudolph, and Embley). With low percentage vapours the dangers which these observers had described were not fatal. Clinically, a 2 per cent. vapour was found to be amply sufficient for the rapid induction of narcosis, while an even lower percentage maintained anæsthesia. After a careful comparison of "incomplete" or "irregular" and "light" anæsthesia, Dr. Dudley Buxton showed that most of the perils of chloroform arose from incomplete and irregular anæsthesia. He exhibited the inhaler devised by Mr. A. Vernon-Harcourt to supply a vapour of 2 per cent. or any lower degree that might be desired; by using it the after-effects were lessened while the dangers were minimised. The results obtained by its intelligent employment had proved most satisfactory.—Mr. A. W. Mayo Robson said that from his experience of the Vernon-Harcourt inhaler in a large number of serious cases he could confirm all that Dr. Dudley Buxton had said in its praise; it would, in his opinion, completely revolutionise the giving of chloroform.—Dr. Macnaughton Jones, also speaking from experience, said that the induction of anæsthesia with it did not take more time than with the Junker apparatus nor was it ever necessary to continue the full 2 per cent. vapour to maintain anæsthesia.—Dr. R. T. Bakewell eulogised the inhaler, especially for children, but explained that on account of the dislike that children had to any form of mask it was convenient to commence the anæsthesia with a few drops of chloroform on lint.—Mr. Vernon-Harcourt said that he had found it better to substitute metal valves for the celluloid ones which he employed at first, as the latter were affected by the vapour of chloroform and lost their shape; moreover, being transparent their action could not be so satisfactorily observed as with metal valves. He inquired whether some form of stand to keep the instrument upright and the interposition of about 20 inches of tubing between it and the face-piece might not be beneficial in saving the administrator fatigue in long operations or in obstetric cases.—Dr. Dudley Buxton said that to one accustomed to the instrument the fatigue was not great even in long operations but that such an addition might prove useful in some instances.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on March 10th, Dr. C. Theodore Williams, the President, being in the chair.—Dr. S. Vere Pearson read a paper on the Diagnosis of Pulmonary Tuberculosis in Infants and Young Children. The diagnosis of intrathoracic tuberculosis was considered under four heads. 1. Broncho-tracheal gland

affection. The differentiation and classical symptoms were described. The differentiation from a persistent cough following whooping-cough was dealt with; it depended upon the exclusion of the two common causes of such persistent cough—namely, adenoids and habit combined with a tendency to repeated catarrhal attacks. If these were appropriately treated the cough usually soon disappeared unless tuberculous glands were present within the chest. 2. Miliary tuberculosis of the lungs. The diagnosis of this form depended upon a study of the general features, the history and course of the case, not upon any special local signs. An insidious and progressive wasting without adequate cause should arouse suspicion. The state of the skin, especially the presence in it of small hæmorrhages or of subcutaneous tubercles, the condition of the hair, irregular pyrexia, quiet demeanour, enlarged spleen, and the variety of anæmia present were important. The wasting had to be distinguished from simple marasmus and that due to septic infection, &c. 3. Tuberculous broncho-pneumonia. Certain peculiarities of this type were described and its differentiation from the simple form with its complications and from localised empyema, purulent pericarditis, and abscess of the lung was reviewed. 4. Rarer types of pulmonary tuberculosis. The varieties, the times of occurrence, and the nature of these types were dealt with briefly.—Mr. E. Laming Evans read a paper on the Treatment of Congenital Club-foot in Early Infancy and showed a number of cases. He advocated manipulation immediately after birth and early recourse to tenotomy of the tibials (anterior and posterior) and flexor longus digitorum for the cure of the varus, followed then by tenotomy of the tendo Achillis to overcome the equinus, with prolonged after-treatment in some apparatus and constant observation by the surgeon.—Mr. Noble Smith congratulated Mr. Evans upon his firm support of the principle of maintaining the fixation of the heel until the inversion of the foot had been entirely overcome. Until the great toe was brought into or beyond a straight line with the inner border of the patella the inversion could not be considered completely corrected. He supported early treatment and reverted to the difficulty of treating neglected cases. He strongly deprecated extensive operation and everything which tended to destroy the natural movement of the foot. Lately he had practised Lorenz's method which differed from the former forced manipulation by the persistency of the surgeon's efforts at the time of operation. He showed some casts and photographs illustrating excellent results obtained by the improved method of treatment.—Mr. J. Jackson Clarke agreed with Mr. Evans's method of treatment which he thought was now followed at all the orthopædic hospitals in London. There were a few exceptional cases in which other methods were required in order to obtain a perfect result. That of manipulation and fixation in plaster of Paris as practised by Lorenz was, in Mr. Clarke's experience, the most valuable. It should not be done until the child was able to walk. Preparatory cleansing of the skin should always be undertaken and sterility aimed at in case of rupture of the skin occuring during the manipulation. Such wounds in these circumstances gave no trouble and healed well under dry dressing.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on March 9th, Professor A. R. Simpson, Vice-President, being in the chair.—Professor Simpson referred to the great loss the society had sustained through the death of Dr. R. Milne Murray. It was more than a year since pneumonia laid him low and deprived the society of his bright and always stimulating presence. He had recovered from the dangerously acute attack and was battling bravely with the after-consequences, so that when they heard of his working at a text-book they hoped that he was on his way to a full recovery. The surgical intervention that might have hastened his cure failed of its desired effect and his brilliant career came to an untimely close. He began the study of medicine with a singularly clear and well-trained mind disciplined first by his father at Fettercairn and afterwards in the University of St. Andrews, where he took the M.A. degree. He early showed himself at home in chemistry and physics and he became an acknowledged master in electricity. During his medical course he showed special interest in midwifery and gained a medal in that class. After graduation he devoted himself specially to obstetrics and gynæcology. He was a born lecturer and when he opened classes of his own he speedily took a foremost place among the teachers in the Edinburgh School of Midwifery. In 1882 he read a paper to the society on a difficult face case where he had used axis-traction forceps with satisfactory results. In 1891 he read an important memoir on the principles on which the axis-traction forceps acts and gave a definite mechanical construction to the instrument based on those principles. He afterwards read papers on forceps with adjustable axis-traction and forceps for occipito-posterior positions of the vertex. He advocated a modification of the forceps with which his name deserves to be associated permanently and which consists in having the traction bar fitted on the traction rods at different carefully measured distances nearer the handle, or further from it, according to the inclination of the pelvis. Another paper was on a Form of Post-partum Incontinence of Urine and its Treatment by Faradism. In later years he advocated the value of electric currents in the treatment of uterine fibroids and other pelvic diseases. His inventiveness showed itself in improvements in electric apparatus and the managers of the Royal Infirmary made the best of choices in placing him at the head of their newly instituted electric department. He contributed many papers to various journals; one especially might be referred to—that on the Physiological and Therapeutic Effects of Water at Different Temperatures, with special reference to Obstetric and Gynæcological Practice. It was a model of scientific work and placed the employment of the hot douche as a hæmostatic on a physiological basis. He filled with diligence, dignity, and courtesy the different offices of secretary, vice-president, and president of the society. His summing up of a discussion was often singularly illuminative and when he had occasion to criticise—and he could at times be keen and trenchant—his criticism was never unkind. His introductory and valedictory addresses as president were eloquent, pregnant with instruction, and presented with the charm of a rare literary style. Professor Simpson concluded by saying that the memory of a life so unselfish, so strenuous, and inspired by such high ideals would long remain as a stimulus to noble effort.—As a tribute to Dr. Milne Murray's memory the meeting of the society was adjourned for a month.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held on March 4th, Mr. C. Carter Braine, the President, being in the chair.—Dr. G. B. Flux read notes on a Case of Post-anæsthetic Coma in a patient, aged 40 years, who was anæsthetised for an hour by the A.C.E. mixture preceded by ethyl chloride. Death occurred on the fourth day. The urine contained a trace of albumin and many granular casts. On post-mortem examination the kidneys and heart were found to be diseased seriously and in the brain were the remains of old emboli. The patient had, curiously enough, never remembered having had a day's illness in her life. The anæsthesia was uneventful. Dr. Flux suggested that the coma (uræmic) was due to the general disturbance caused by the severe operation, an amputation of the breast.—Miss L. B. Clapham, M.B., related a similar case in which death occurred after four days. The patient was a stout woman, the operation being repair of an umbilical hernia. The A.C.E. mixture was given for an hour, followed by ether for three-quarters of an hour. The patient never recovered consciousness but vomited and became cyanosed and restless and the respiration became stertorous and of the Cheyne-Stokes type. Bronchitis and dilated heart ensued. Post mortem were found old mitral disease, diseased kidneys, great congestion of the brain, and three small cortical hæmorrhages.—Dr. Dudley W. Buxton and Dr. J. F. W. Silk discussed these two cases.—The President communicated a case of Goitre in which Nitrous Oxide was given and subsequently Ethyl Chloride. A young, healthy-looking woman was given nitrous oxide for the extraction of teeth. During deep anæsthesia asphyxia ensued without apparent cause. The patient recovered when laid horizontally and then an engorged goitre was discovered which had been concealed by the mackintosh apron. After an interval ethyl chloride was administered most successfully, as also on two subsequent occasions. The President suggested that the neck should always be exposed as far as the suprasternal notch in all administrations. He believed that in this case there was a sudden occlusion of the trachea from downward pressure on the goitre and that this was relieved when the patient was on the floor. The tongue probably had been somewhat pushed back and the jaw depressed in getting a good hold of a lower molar tooth.—Dr. A. G. Levy showed an adaptation for Administering Ethyl Chloride by Clover's Ether Inhaler. A graduated glass tube was cemented into the vulcanite stopper of the inhaler and the dose was then sprayed into the tube

which at first was dependent and then inverted. The ethyl chloride vapour was gradually mixed with air by rotating the inhaler as far as the point marked 3. The indicator was kept at this point until the wished for degree of narcosis ensued. Ether could afterwards be added to continue narcosis.—Dr. Dudley Buxton then read a paper entitled "Some Reflex Dangers in Early Narcosis."—The discussion on this paper was adjourned.—Afterwards the annual general meeting of the society was held. The reports of the council and treasurer were read and adopted. The following officers were then elected for next session: President: Mr. Carter Braine. Vice-President: Dr. Silk. Treasurer: Dr. R J. Probyn-Williams. Members of Council: Mr. Harvey Hilliard, Dr. T. D. Luke (Edinburgh), and Dr. J Blumfeld. Honorary secretaries: Dr. W. J. McCardie and Mr. H. C. Crouch. Honorary auditors: Miss L. B. Aldrich-Blake, M.D., and Dr. C. J. Woollett.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on March 2nd, Dr. J. S. Bury, the President, being in the chair.—Dr. I. Walker Hall read a paper on the Effect of Decapsulation on Kidneys in which a degenerative nephritis had been induced. He said that the removal of the capsule in such conditions was always accompanied by laceration of the cortical tubules and hæmorrhage. In from eight to 14 days later the kidney capsule had formed once more and was thicker than the normal capsule. The hæmorrhages and lacerations were replaced by cellular tissue. The details of capsular changes in two human kidneys after partial removal of the capsule were given.—Mr. E. Stanmore Bishop read a paper on Gall-bladder Surgery. He attributed the recent impetus to surgical work in this region to three things—namely, asepsis, clearer diagnosis, and improved technique. The older teaching which laid stress in cases of biliary calculi upon the presence of tumour, jaundice, intermittent pain, results of exploratory puncture, the discovery of calculi in fæces, and sensations of grating was insufficient and sometimes misleading. Tumour was usually absent. The gall bladder was usually contracted and deeply seated, therefore grating could not be felt and puncture was impossible; the latter was also extremely dangerous. Jaundice was frequently absent; when present it was evanescent and in all cases it depended upon the position of the stone. Pain might be of two kinds—namely, either continuous and dull aching or intermittent, sharp, and intense. The latter was followed by tenderness and this was utilised in the two tests of Robson and Murphy both of which Mr. Bishop had found trustworthy. Improvements in technique included the free exposure of the biliary tract to sight and touch by careful separation of adhesions and occasionally by rotation of the liver. The danger of undue traction upon the vena cava was pointed out. Immediate and thorough clearance of all calculi was recommended in preference to the earlier two-stage method. For the control of hæmorrhage chloride of calcium and adrenalin were useful. Mr. Bishop's remarks were based upon an experience of 31 cases.—Dr. Ernest S. Reynolds mentioned a family in which the eldest daughter had died insane, the second daughter had aberrant disseminated sclerosis, the third child (male) had fairly well marked disseminated sclerosis of the ataxic paraplegia type, the fourth child (female) and the fifth child (male) were normal, and the sixth (male) had aberrant disseminated sclerosis. The father had recently suffered from melancholia, his first cousin (once removed) had died from disseminated sclerosis, and a distant cousin of the last had exophthalmic goitre. Dr. Reynolds mentioned also the case of a girl who had both disseminated sclerosis and exophthalmic goitre fully developed at the same time.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on March 4th, Dr. P. McBride, the President, being in the chair.—The President showed a Knife for Slitting up the Tonsil of the Lacunæ and a Pair of Punch Forceps for Removing the Stumps of Polypi.—Dr. E. Furniss Potter showed a case of Immobile Right Vocal Cord in a youth, aged 19 years. The condition was probably of a tuberculous nature, though there were no definite signs of disease in the chest or sputum.—Dr. A. Smurthwaite showed a specimen of Tuberculosis of the Larynx and Trachea of rapid course in a man aged 67 years.—Dr. H. Tilley showed three cases in which radical operations for Empyemata of the Accessory Sinuses had been carried out. All three cases had been severe in their symptoms and the final result of operation in each case was cure.—Dr. J. Dundas Grant showed a case of Ulcer of the Tonsil, probably the primary lesion, in a young woman with well-marked cutaneous syphilides; also a case of extreme Laryngeal Œdema in a man, probably secondary to tertiary specific lesion, and treated by mercurial inunction and local incision (nearly recovered).—Dr. Atwood Thorne showed a man, aged 32 years, with Adhesion of the Soft Palate to the Posterior Pharyngeal Wall. The interest of the case was that when first seen there was a mere pinhole aperture but that instead of the opening closing it had without operative interference become larger month after month, apparently by contractions of the adhesions towards their fixed points in the periphery.—Mr. R Lake showed a case of Chorditis Tuberosa and a woman with Tuberculous Ulcer on the Left Vocal Cord.—Dr. W. H. Kelson showed a girl suffering from a Nasal Sinus situated about an inch from the tip in the mid-line.—Dr. Fitzgerald showed a man, aged 34 years, with a Swelling of the Right Ventricular Band and a small Papillomatous-like Growth on the Anterior Margins of the Right Cord. He also showed a patient, aged 28 years, who had suffered from what he considered to be Necrosis of the Premaxillary Bone.—Dr. William Hill said that in his opinion the sequestrum was not the premaxilla itself but the Stensonian portion of the premaxilla.—Dr. H. J. Davis showed a patient with a Large Swelling between the Arytenoids and an Œdematous Mass of raised Mucous Membrane resembling a large mucous polypus and extending below the cords. The question was whether the case was one of acute œdema resulting from syphilis alone or one of mixed tuberculous and syphilitic infection.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held in the board-room of the Victoria Infirmary, Glasgow, on March 3rd, Dr. Thomas Richmond being in the chair.—Mr. A. Ernest Maylard delivered an address on Abdominal Surgery, Retrospective and Prospective, based on 14 years' personal experience in the wards of the Victoria Infirmary. The growth in numbers of abdominal operations performed per annum was traced through the period, demonstrating the marked and rapid increase that had taken place in this respect. Treating chiefly of the surgery of the alimentary tract, with which Mr. Maylard has particularly identified himself of recent years, numerous conditions were specified for which operations not dreamed of but a short time ago were now successfully performed. Congenital hypertrophic stenosis of the pylorus, chronic gastric catarrh, gastric ulcerations simple and malignant, idiopathic dilatation of the colon, mucous colitis, &c., were treated of and the operations for their relief or cure were described. More than a dozen cases of operations upon the stomach were shown, comprising a most striking one of gastro-jejunostomy performed five years ago for pyloric obstruction due to adhesions following upon chronic gastric ulcer. The patient is now in robust health, actively engaged in his occupation, and without any symptom referable either to his stomach or any other organ. Prior to the operation in May, 1899, he had been a chronic invalid for years, much emaciated and weakened, and totally incapacitated for work on account of gastric trouble. Other cases illustrated the incisions employed in various gastric and intestinal operations.—Dr. E. Duncan and Dr. G. S. Middleton, who spoke afterwards, were of opinion that surgery had gone an unnecessary length in the treatment of the diseases of the stomach and especially in the case of chronic dyspepsia and chronic gastric ulcer.—Mr. Maylard, in reply, referred the speakers to Dr. Russell's statistics concerning gastric ulcers and urged physicians to watch such cases throughout a period of years and to note the ultimate results which were, he felt convinced, much more serious than were generally supposed.

WIGAN MEDICAL SOCIETY.—The annual meeting of this society was held on Feb. 18th, when the following were elected office-bearers for the ensuing year. President: Mr. J. Chronnell. Committee: The President, Dr. M. Benson, Mr. T. M. Angior, Dr. J. Blair, Dr. F. Rees, and Mr. Wolstenholme. Honorary treasurer: Mr. E. H. Monks. Honorary secretary: Mr. W. Berry. A series of Clinical Photographs illustrating Nervous and Mental Diseases was shown on the screen by Dr. E. S. Reynolds.

Reviews and Notices of Books.

Diseases of Women. By ALFRED LEWIS GALABIN, M.A., M.D.Cantab., F.R.C.P.Lond., Consulting Obstetric Physician to Guy's Hospital, &c. Sixth edition, with 284 Illustrations. London: J. and A. Churchill. 1903. Demy 8vo, pp. 695. Price 16*s.* net.

So many years have elapsed since the appearance of the last edition of this work that the present volume is practically a new book. Considerable additions have been made and detailed descriptions with illustrations have been introduced of the modern methods of performing the various abdominal, vaginal, perineal and gynæcological operations. Dr. Galabin's extensive clinical experience and his long association with students, both as a teacher and as an examiner, render him peculiarly fitted to write a work on gynæcology. This new edition has many merits, not the least of them being the fact that it contains a judicious mixture of old and new theories and modes of practice. At the present day, when surgery plays so large a part in most text-books dealing with diseases of women, we are inclined to forget that a great many gynæcological patients can be quite efficiently treated by medical measures alone. The author has laid due stress upon this important fact and yet all the most approved surgical methods of treating such cases will be found in the book.

As an antiseptic for general use in gynæcological work Dr. Galabin recommends lysol and points out that if it be used with cold boiled water it will remain clear enough not to obscure the instruments. In sewing up the abdominal wall he prefers three layers of sutures, the first passing through the whole thickness of the abdominal wall and of the two remaining layers one uniting the anterior layer of the fascia of the rectus muscle and the other the skin. The view that only the most superficial layers of the mucous membrane are thrown off during menstruation is taken, and an illustration of a section of the mucous membrane of a uterus during menstruation removed by hysterectomy is given which tends to confirm this view. In the chapter on Stenosis of the Cervical Canal it is a pity that the author has allowed so many figures of old-fashioned metrotomes to remain. Although their use is not recommended the mere fact that they are figured will lead the student to attach an undue importance to them. In discussing the effect of cold in rendering the uterus more vulnerable to the action of organisms which under normal conditions are only saprophytic in character a very interesting case is related in which muco-purulent discharge issuing from the cervical canal in a virgin, so severe as to suggest a suspicion of gonorrhœa, was found to contain almost a pure culture of the influenza bacillus. In very virulent forms of septic endometritis leading to purulent peritonitis the author says that the most rational form of treatment would be to remove the uterus by vaginal hysterectomy, thus getting rid of the primary focus of infection. The best chance of saving life by this means would be to perform the operation as soon as the diagnosis of septic peritonitis had been made. It is recommended that in cases where the patient is not likely to live through a hysterectomy the tubes should be ligatured as they are often the avenue of infection. The interesting question of the etiology of cases of chronic endometritis is very fully discussed in the chapter devoted to this subject. That there is a microbic origin for at any rate some of these cases is undoubted but in many instances where organisms can no longer be found changes in the nutrition of the tissues, either of a hyperplastic or degenerative character, often remain. In other cases it is suggested that the condition may not be due to any organism but to trauma, to some toxin, or even to nerve influence alone.

The author prefers intraperitoneal shortening of the round ligaments to Alexander's operation, since it affords a reasonable certainty of cure with the least disturbance of the normal relations. Under what is called adenoma of the uterus Dr. Galabin records the fact that he has removed by enucleation multiple encapsuled tumours of the fundus uteri which were thought to be ordinary encapsuled fibroids but which presented the microscopic structure of adenomatous tumours. It seems extremely likely that these tumours were really adeno-myomata. We fail to find any mention of this interesting variety of fibroid tumours of the uterus in the account given of those tumours, nor is there any reference to such tumours in the index.

The operative treatment of fibroid tumours of the uterus is considered very fully and the various methods of removing them, both ancient and modern, are described in detail. Indeed, in this chapter we think the long description devoted to the use of the wire écraseur and the details of Apostoli's method of treatment might have been eliminated with advantage. In considering the causation of a pelvic hæmatocele attention is drawn to the fact rather likely to be overlooked at the present day—viz., that intraperitoneal hæmorrhage from inflamed peritoneum, from the lining of a Fallopian tube without any evidence of tubal pregnancy being present, and hæmorrhage from an ovary have been demonstrated by abdominal section to occur. It is, however, extremely doubtful if such a condition is ever due to reflux of blood from the uterus, or to excessive bleeding from a ruptured Graafian follicle, as has been described by some writers.

Dr. Galabin's well-balanced judgment has enabled him to present the two sides of many debateable questions with much fairness and as a result of this the whole work forms a very valuable addition to gynæcological literature and will be of much value to the practitioner, to the student, and to the gynæcologist. The illustrations are on the whole very good, many of them being reproductions of the beautiful drawings in Dr. C. Hubert Roberts's Outlines of Gynæcological Pathology. There are some, however, which might have been omitted with advantage, as, for example, the very poor drawings of a sarcoma of the ovary on p. 527. The page has been enlarged to a much more convenient size than that of former editions.

The Nutrition of the Infant. By RALPH H. VINCENT, M.D. Durh. London: Baillière, Tindall, and Cox. 1904. Pp. 295. Price 10*s.* 6*d.*

IN his work entitled "The Nutrition of the Infant" Dr. R. Vincent has made an ambitious attempt to improve on the ordinary methods of modifying cow's milk on the percentage system. It must be remembered, however, that no matter how elaborately cow's milk may be modified it can never be converted, or even approximately converted, into human milk. Indeed, the more closely we attend to the chemical properties the more likely are we to lose the physiological resemblance. The infant who derives his nourishment from the natural source has this advantage over one who is artificially fed—namely, that the extremely complex molecular combinations which exist in his food, such, for instance, as the natural ferments of milk, the various proteid constituents, and the combined salts, have not been disintegrated and disorganised by the disturbing processes connected with artificial modification. If cow's milk is to be used as a substitute for human milk, and if it be admitted that modification of its chemical constituents is necessitated by reason of the differences which distinguish the one from the other, then surely our first object should be to secure chemical similarity at as little sacrifice of the physiological properties of natural milk as is possible in the circumstances. Now a considerable part

of Dr. Vincent's book is taken up with a description of a method of home modification which is practically the same as that employed in milk laboratories. He proposes to adjust the differences which exist between cow's milk and human milk by a series of manipulative processes which must very seriously interfere with the normal molecular combinations existing in fresh milk. For the preparation of his accurate percentage mixtures he requires a cream which has been separated by centrifugalisation, and further he requires a cream-free milk which is also obtained by the same mechanical means. In the next place, for many of his mixtures he requires whey which can only be obtained by the action of rennet. The three chief constituents, therefore, of his mixtures are preparations of milk which have all been seriously tampered with so far as their natural physiological properties are concerned. By the graduated combination of these stock materials and by the addition of milk, sugar, lime-water, and distilled water specimens of modified milk may be prepared of almost any desired percentage composition, and not only is the total percentage of proteids thus completely under control but the relative proportions of whey-proteids and caseinogen may be modified at will. No doubt it is often a very great advantage to be able to reduce at will the bulky coagulum of cow's milk but even this advantage can be obtained at too great a cost. The general principle of percentage modification is probably perfectly sound; in fact, it is the only possible method of obtaining accuracy and securing uniform results, but for our part we regard a method so complicated as that suggested by Dr. Vincent as calculated to defeat the very ends which it has in view. In other respects we regard Dr. Vincent's little book as altogether admirable. He supplies complete directions for modifying the food in accordance with the needs of the infant and he describes at length the normal development of the child and the general methods of testing and examining the physical condition of children.

The Purification of Sewage and Water. By W. J. DIBDIN, F.I.C., F.C.S. Third edition, revised and enlarged. London: The Sanitary Publishing Company, Limited. 1903. Pp. 379. Price 21*s*.

Mr. Dibdin was one of the earliest champions of the bacterial system of purifying sewage and his interest in the matter took a very practical shape in the experiments which he undertook in the capacity of chemist to the London County Council on the bacterial treatment of the London sewage at Barking Creek in 1892. In 1887 Mr. Dibdin referred to the possibility of bacterial agencies being employed to do the work of purification and his observations were met with considerable scepticism. Now not only has the chemical treatment of sewage been given up in a great many places in favour of bacterial methods but the question had become of such importance that a Royal Commission was appointed to inquire into this subject four years ago and its labours are not yet at an end. Mr. Dibdin's view of the work of this Commission may be quoted from his preface. "What the ultimate decision of the Commission may be," he writes, "it is impossible to forecast with safety, but from the information available in their official reports and the cross-examination of witnesses it is clear that bacterial systems have 'come to stay' and that the desired result may be secured by either of several methods of applying that principle and that the natural process of the survival of the fittest will gradually result in the establishment of certain methods applicable to different classes of sewage with certainty and success." Mr. Dibdin knew from the results of his early experiments at Barking Creek that the attitude which he adopted was amply supported by practical results and we cannot fail to recognise that he has done much to bring the system of purification of sewage by bacterial agencies to its present satisfactory position. The volume before us in the light of these facts is calculated to be valuable and, as a matter of fact, we find the author's practical experience of various schemes fully detailed. He has also taken the opportunity of giving full information upon the subject by summarising some of the more important evidence given before the Royal Commission on Sewage Disposal. The first five or six chapters are practically historical and give an account *de novo* of the advances that were made with bacterial methods. In subsequent chapters he deals with the bacterial treatment as applied to effluents containing trade waste. The questions of purification of rivers, the discharge of sewage into the sea, and the filtration and examination of potable water are all adequately dealt with in succeeding sections. Finally, there are chapters on the action of soft water upon lead, the absorption of atmospheric oxygen by water, analyses and their interpretation, and the ventilation and deodorisation of sewers. In the appendix the author describes a micro-filter which he has devised for estimating the quantity of suspended matters in drinking water—a method which has given important data in regard to determining whether waters under examination have been exposed to contamination.

It is quite obvious that this book will serve as a very valuable source of reference upon the subject of purification of sewage by organisms. It will be of service to those interested both in the theory and the practice of the resolution of complex waste injurious compounds into simple innocuous substances. The sanitary engineer and the bacteriologist will, as a matter of course, avail themselves of the very practical and valuable experience recorded by Mr. Dibdin.

The Physiological Feeding of Infants. By G. ERIC C. PRITCHARD, M.D.Oxon., M.R.C.P.Lond. Second edition. London: Kimpton. 1904. Pp. 197. Price 3*s*. 6*d*. net.

THERE is a weakness of construction in this book disclosed by the secondary title "A Practical Handbook of Infant Feeding and Key to the *Physiological Nursery Chart*," for the author has essayed the difficult task of attempting to combine a thoroughly professional treatise for physicians with an elementary handbook on the feeding of babies for the use of "nurses," by which term is meant not the modern dignified attendant on the sick, but the more humble, though possibly more important, servant who rules in the nursery. As a consequence there is much matter in this volume which spoils its taste when read by the trained student of pediatrics, such as the painstaking explanation of the term "percentage" and other elementary expositions, while, on the other hand, there is a good deal of commentary, excellent and sound in itself, on such points as the inherited attributes of offspring, which is most useful for the parents but which it is not always advisable to place in the hands of an imperfectly educated woman.

Half the volume is devoted to the artificial feeding of infants and the bulk of that space is filled by a careful consideration of the teaching of Rotch and the practical and simple combinations arranged under his influence in the modern milk laboratories pioneered by the Walker-Gordon laboratories in America. The modified milks prepared according to Rotch's formulæ are now obtainable in London from several of the dairy companies; the elements of the reconstructed milk are (1) cream containing 16 per cent. of fat; (2) separated milk freed from its cream by centrifugal process; and (3) milk sugar, in a standard 20 per cent. solution. These constituents can obviously be combined in any proportion and tables have been constructed, one of which is given by Dr. Pritchard in full, showing the percentage composition of milk which should, as an average experience shows, be employed during each

week of the first year of infancy. The author recommends the use of the forms for prescribing the variations in the constitution of this "built-up" milk which are issued by the dairy companies; in these the percentage of each constituent is given and to the laboratory employés is left the working out of the amounts of each constituent in any given quantity for each day's service. In order to make it possible for a nurse to combine the standardised constituents at home a further table is given of the quantity of milk, standard cream, and milk sugar necessary to make one pint of percentage mixture for each week of life. Dr. Pritchard points out, we think wisely, that there is no advantage in using a syrup of milk sugar, but that the solid sugar, which may now be purchased in pound tins, can be quite easily measured by bulk and is in this form more easily protected from decomposition.

No claim is made in the volume that this system of preparing standardised milk is perfect; the author is quite alive to its dangers and limitations, to which attention has in the last six months been drawn in contemporary periodicals by Dr. T. D. Lister, Dr. H. Ashby, Dr. E. Cautley, and others. These writers have, however, rather approached the subject from a democratic point of view and have shown the risks attending the haphazard issue of "humanised" milk from municipal depôts. Dr. Pritchard is writing for the well-to-do classes in large towns and he accentuates very clearly the important point that the use of these artificial milks must be in the hands of physicians and nurses with some skill to recognise when the feeding is at fault. The lack of skilled supervision of the infant is already bringing into discredit praiseworthy efforts on the part of many municipal bodies, so much so, that some municipalities, such as Liverpool and Battersea, are already making attempts to get their local medical charities to supervise the results of their municipal infant feeding.

Some 60 pages, and they are the best in the book, are devoted to the forms of modification of milk necessary to suit different physiological requirements. Excellent illustrative cases are given of the conditions which should, to the watchful attendant, indicate errors of digestion or absorption: vomiting, its causation and forms; abnormalities in the stools; constipation, its manifold causation—such points are considered with care and knowledge. The temptation which is so often presented to practitioners by those in charge to combat habitual constipation by drugs, enemata, and suppositories is wisely avoided in these pages and its true cause and proper correction are indicated. The directions for testing the conditions of general nutrition, such as the proper increase in weight, the state of the skin, the muscular development, and the condition of the anterior fontanelle, are given in such terms that any intelligent nurse should be able to appreciate them. The necessary modification of food in difficult cases has led the author to introduce many elaborate preparations and formulæ, most of them excellent, but the danger in a work of this kind presents itself that parents and nurses might dabble in them without expert instruction. Such preparations as Prideaux's casumen, virol, or Lahmann's vegetable milk have undoubtedly a great value when properly combined with ordinary milk for infants who present inferior powers of absorption, but unskilled authorities in the nursery should not be allowed to play with them.

The second half of the volume contains a large body of suggestive observations on the development of infants which are not found in most text-books of disease as manifested in childhood and it is well worth careful perusal. The general style of the author's writing is simple, straightforward, and phrased with care. We have no hesitation in saying that no practitioner will regret the expenditure of the small sum which the book costs and that its careful perusal will well repay the time spent thereon.

LIBRARY TABLE.

Compounding and Dispensing made Easy: an Aid for the Promotion Examinations in the Subjects for Non Coms. and Men of the Royal Army Medical Corps. By H. HAROLD SCOTT, M.B. Lond., Lieutenant R.A.M.C. London: Gale and Polden, Limited. (Military Series.) 1904. Pp. 316. Price 7*s.* 6*d.*—Before the author of this little work entered the army he held the appointment of assistant demonstrator in materia medica and pharmacy at St. Thomas's Hospital. He might therefore be supposed to be unusually well fitted to write and to instruct on a subject which while not requiring any original work yet needs to be presented in as attractive a form as possible. In studying such a subject the arrangement of the different sections and the grouping of the preparations are of the greatest consequence in facilitating progress. Mr. Scott's book is an expansion of the notes which he has been giving to the members of his classes of would-be military compounders and he has published it owing to complaints from members detailed for classes of instruction that the subjects laid down in the syllabus for their examination were not to be found in any one book and that they knew not where to look for them. The present work embraces all the points required with the exception of the elementary chemistry. The book is divided into six sections. The first is purely introductory; it is full of encouragement and impresses that golden rule in dispensing, "Be careful, clean, and accurate"; it also contains useful paragraphs on the incompatibility of drugs and the explanations of the Latin and Greek terms which compounders may expect to meet with. The five subsequent sections deal respectively with: (2) Inorganic Materia Medica and the Carbon Compounds; (3) Pharmaceutical Processes and Groups of Pharmacopœial Preparations; (4) Organic Materia Medica, Vegetable and Animal; (5) the Commoner Forms of Poisoning, their Symptoms and Treatment; and (6) the Army Forms used by Compounders. It is evident that the author's early training as a teacher has been of the greatest service; the arrangement of the materials in the book is excellent, the information is correct, and the whole tone is judicious. A feature of the book is a number of tables which show the sources of many of the preparations and which must tend greatly to facilitate study. The section on Poisons is short but the symptoms and directions for treatment are clearly set forth. Useful directions are also given for the cleansing and sterilising of surgical instruments and sponges and for the keeping of rubber instruments. We congratulate the author on his work and we are glad to see that an officer of the Royal Army Medical Corps has had the good sense to produce such a book—it must prove to be most helpful to those for whom it is intended.

Studies for the Bakehouse. By A. KIRKLAND (Irvine). London: The Baker and Confectioner, Limited. 1903. Pp. 172.—This book contains a series of lectures, 19 in all, which were delivered before a practical class in Ayrshire. The author takes a sound position in enjoining upon his readers that special attention should be given not only to the sanitary environment under which bread is made but also to the choice of materials and machinery. Bread-making, says the author, is not a lost but a new art. To this statement we imagine that a good many people might demur with reason, for it cannot be said that the average white loaf of the present day, made by machinery or by hand from roller-milled flour, is as good as the bread of a generation or so ago. Presumably it is the fault of the public that a white loaf is demanded but we have our doubts as to whether this is so, for expressions of regret may be heard on all sides that the old-fashioned farmhouse loaf with its rich nutty wheaten flavour and golden colour is as extinct as the dodo. Even when some people take the

trouble to make bread at home the flour is generally of the anæmic order in spite of improved methods of milling. In saying this we do not detract from the value of this book, for the author has pursued his subject on sound scientific and hygienic lines. We should, however, like to have seen the question touched upon of the old farmhouse loaf made from the old-fashioned ground flour *versus* bread made from the roller-milled article. It may be a heresy but the empirical loaf is regarded by many with more favour than that prepared on exact lines. It should be added that some medical men have advanced the idea that the flours imported from America have something to do with the prevalence of appendicitis and it is stated that some of these flours yield hard pellets of gluten which it is thought may possibly start the inflammatory process.

New Conceptions in Science. By CARL SNYDER. New and revised edition. New York and London: Harper and Bros. 1904. Pp. 361. Price 7*s.* 6*d.* net.—We reviewed the first edition of this book in THE LANCET of Oct. 31st, 1903, p. 1239, and there is little to add that could be fresh criticism in regard to the second edition the issue of which has so quickly followed the first. Beyond a little revision of phraseology here and there, there is no difference between the two editions. The book is an American view of the relations of science and progress and on the whole the story is told in a bright and attractive way, though perhaps the author occasionally falls into a line of interpretation which is a somewhat elastic presentation of actual facts. This is a common tendency of popular disquisitions on scientific progress.

Food for the Tropics. By T. M. MACKNIGHT. London: W. Thacker and Co. 1904. Pp. 116. Price 3*s.* 6*d.* net.—This is a valuable book and, as Mr. Macknight implies in his preface, fills a gap. We are glad to see, also, that he lays stress on the point that the indigenous products of a tropical country are more suitable food for the inhabitants than any which can be imported from a country having a totally different climate. The food stuffs described in the book are classified into those which are eaten respectively for their hydrocarbons, proteids, fats, sugars, salts, and for their flavour and carminative properties, such as spices and curry powder. The book is a useful addition to the cuisine of a household in the tropics.

Calendar of the University Correspondence College, 1903–04. Cambridge: Burlington House. Pp. 64, plus 142. Price 1*s.* net.—Besides the usual contents of an educational calendar the one before us contains a number of examination papers with their solutions. We may point out that the solution to the first question in the paper in English is rather confusing, for the question set is to write an essay on the mountain ranges of *Europe*, while the solution talks about the mountains of the *Old World* and says that "the great axis runs from the coast of Spain to the Pacific seaboard." In the next paragraph the student is told, "Nothing higher than Mont Blanc." Such a muddled solution as this would not be much help to the ignorant seeker after knowledge. Otherwise, so far as we have tested them, the solutions are clear.

Recent Excavations in the Roman Forum, 1898–1904. By E. BURTON BROWN. London: John Murray. 1904. Pp. 223.—Rome, Athens, and Constantinople are the three cities about the history of which no educated man is ever tired of hearing and every year adds to our knowledge of the first two if not of the last named. Mrs. Burton Brown's little book, which is prefaced by an introduction written by the Commendatore Boni who has been in charge of the excavations, gives a very clear account of the findings in the Forum during the period with which the work deals. From a medical point of view the most interesting discovery was that of the fountain of Juturna which was almost from the first credited with healing properties and became in comparatively late times, 293 B.C., connected with the cult of Æsculapius. Of the many other objects of interest we have no space to speak but we would counsel anyone who goes to Rome in a proper spirit to provide himself with this little book and to use the information therein contained wisely.

JOURNALS AND MAGAZINES.

The Practitioner.—The issue of this journal for March continues the series of articles relating to Typhoid Fever. A contribution upon the diagnosis of that disease from the pen of Dr. Claude B. Ker contains a careful discrimination of the many conditions that have to be considered as well as a strong defence of the value of the Widal test which Dr. Ker pronounces after three years' experience to be practically infallible. Dr. Ker ascribes much importance to the bronchitis and the epistaxis of the early days of the illness from a diagnostic point of view. Dr. Arthur Whitfield's lectures on Eczema are concluded in this number. The illustrations are disappointing, a fact which appears to us to be usually the case when it is attempted to reproduce the appearance of lesions of the skin by photographic processes. A series of cases of Cancer of the Mouth and Fauces by Mr. Stanley Boyd and an excellent monograph on Black Urine by Dr. A. E. Garrod are also contained in this issue.

Medical Electrology and Radiology.—This journal, which is the official organ of the British Electro-Therapeutic Society and is now entering on Volume V., will from the beginning of the present year be published monthly instead of quarterly as hitherto. The change is made chiefly with a view of enabling the reports of the proceedings of the Electro-Therapeutic Society to be placed in the hands of members more promptly than before. Several excellent articles begun in the January number are continued in February—such as the review by Dr. W. S. Hedley, the editor, on the Advances made in Electricity and Radio-activity in 1903, Dr. George Herschell's Practical Lessons in the Treatment of Affections of the Gastro-intestinal Tract by Electrical Methods, and the Proceedings of the Thirteenth Annual Meeting of the American Electro-Therapeutic Association. The annual address delivered by Sir Isambard Owen at the conversazione of the British Electro-Therapeutic Society is reported in full in the January number. The February number contains editorial remarks on M. Blondlot's "n" rays and the first instalment of an article by Mr. Clarence A. J. Wright on the Methods of Application of High-frequency Currents.

New Inventions.

INDIARUBBER ANTRUM PLUG.

FOR some years I have had made for me a solid indiarubber plug in sizes corresponding to the English catheter gauge Nos. 3 to 12. I found that they were more comfortable and satisfactory than the hollow metal tubes. At first I had trouble in getting them made sufficiently strong

and at a price suitable for all classes of patients. Messrs. Mayer and Meltzer, of 71, Great Portland-street, London, W., have now undertaken to supply them, moulded in one piece and at a reasonable price. The round shield on

the base can be cut to any shape, so allowing them to be used both for the operation through the alveolar process and above in the canine fossa. After the operation opening has closed to the required size the plug is inserted, the shield being cut wherever it appears to press uncomfortably. The patient is then given a Higginson syringe with a soft catheter attached corresponding in size to the plug selected. This forms an effective and convenient apparatus for daily washing out the affected cavity.

Harley-street, W. CLAUD WOAKES.

Analytical Records
FROM
THE LANCET LABORATORY.

CASTOREUM BROMIDE.

(AGENCY: HARTMANN, HOHMANN, AND CO., MOULTON-STREET, STRANGEWAYS, MANCHESTER, AND 33, SEETHING-LANE, LONDON, E.C.)

THE formula of this preparation is novel, comprising bromide, valerian, and castor. Its employment is suggested in nervous disorders and hysteria and in particular it is stated to have been prescribed successfully for epilepsy, chorea, and sleeplessness. "Castoreum bromide" consists of an effervescent powder and affords a convenient way of taking two drugs which are disagreeable to the taste. Castor is rarely prescribed now, although it has some reputation as serving to control the spasms of hysteria and other convulsions.

ANTURIC BATH SALTS.

(THE ANTURIC SALTS COMPANY, LIMITED, 12, SUFFOLK-STREET, PALL MALL, LONDON, S.W.)

This preparation, according to its vendors, is the solution of the great problem—gout. The "remedy" proves to be a powder composed principally of carbonate of sodium with a trace, probably as an impurity, of common salt. Our readers will know what value as a remedy for gout to set upon this article, the price of which is 3*s.* 6*d.* per tin. We advise those sufferers from gout who are quoted as having given testimonials in favour of this preparation to try carbonate of sodium which is much cheaper. A pinch of salt might be added to the bath in order to imitate more closely the Anturic preparation. Patients are advised by the Anturic Salts Company to take care before getting out of the bath to place a wet towel over the side in order that they may take a firm grip on emerging as the "Anturic salts combining with the matter exuded by the skin render the body slippery." There is no warning given as to the probably harmful action of the strong alkali contained in these "salts" upon some skins.

"ATOMO" CIGARETTES.

(S. COHEN AND CO., 1 AND 2, SNOW HILL, LONDON, E.C.)

The tobacco of the cigarettes examined has been subjected to a strong draught of air which removes adherent sand, clay, light fluffy particles, and other mechanically adherent matters. The tobacco leaf is thus not only improved in colour but in flavour also when smoked. The effect of the process is clearly demonstrated in the following results of analysis. The untreated tobacco contained 12·05 per cent. of mineral matter, of which 4·15 per cent. proved to be sand, &c. The tobacco subjected to the forced draught contained 10·75 per cent. of mineral matter of which 2·65 per cent. was sand. The process thus removes nearly 50 per cent. of useless and probably irritating mineral matter. The dust so removed proved to contain 29·65 per cent. of mineral matter of which no less than 21·30 per cent. was fine sand. It is not only mineral matter that is removed, for on microscopical examination particles of fibre were observed as well as a fluffy material which might easily prove to be a source of irritation to the throat. It is possible that cigarette smokers derive an inflamed throat from drawing into the mouth the irritating light and easily removed particles present in the tobacco leaf. Some persons state that though they are inveterate smokers of the pipe or cigar and suffer no inconvenience thereby their throats are at once affected when they smoke cigarettes. The removal of dust by this process indicates that it is a possible factor in such cases.

Looking Back.
FROM
THE LANCET, *SATURDAY*, March 18, 1826.

LONDON MEDICAL SOCIETY.

THE Anniversary Meeting of the Members of this Society was held on Wednesday last, at the London Coffee-house, when the following ORATION[1] on the Study of the Human Mind was delivered by Dr. HASLAM.

Of ordinary minds, the memory consists, for the most part, of *excited recollections*, and the character of this faculty in animals seems to be wholly of this nature. Study, in its proper sense, is the fixation and endurance of the attention to any particular subject, and this attention, as has been before observed, is a voluntary act, acquired by repeated and even painful exertions. If we attentively watch the proceedings of our own minds, even under the endeavour to pursue a subject of delighting investigation, we become shortly aware that we are interrupted by external circumstances distracting the attention, or by the intrusion of reveries, entirely irrelevant to the direct object of our meditations, which frequently engage us so earnestly, that the original subject escapes beyond the power of immediate recovery. Since, by a candid confession, these intrusions to a greater or less degree are common to all minds, we must consider the control or voluntary power which the intellect can exercise over its thoughts, so as to confine and direct them, to be the highest effort of human perseverance and attainment. It is this concentration of mind and promptitude of thought—this undiverted pursuit of the desired object, that persuades in council, rallies in debate, averts impending disaster, and, in the moment of perilous conflict, turns the balance to victory. The nature of volition, in a medical point of view, is of the greatest importance, nor is it less interesting in a moral aspect, for the just consideration of this subject will tend to throw additional light on tremor, paralysis, chorea, tetanus, and other morbid affections of the same class; it will explain the states of sleep, dreaming, and somnambulism, and conduct us to the proper investigation of those affections of the intellectual part of our nature, that render man incompetent to exercise his volition, or disqualify him for the management of himself and his affairs; for it is evident that man, as a responsible agent, is equally involved by the determinations of his will, in committing such actions as he ought to avoid, and in leaving undone that which it is his duty to perform. In the successful prosecution of this subject, we may expect a nicer discrimination between crime and insanity than has been hitherto established, and anticipate the explosion of that baneful doctrine of the mind's unsoundness, the mischievous contrivance of forensic subtilty, the refuge of ignorance and the tool of fraud—the blazon of materialism, an insult to common sense and a libel on the Christian religion.

[1] Only a portion of the report of the oration has been transcribed. A footnote states that "This Oration was received with reiterated shouts of applause."

PROPOSED CENSUS IN 1906.—At a meeting of the Royal Statistical Society held on March 15th it was announced that the council of the society was about to represent to the Board of Trade the desirability of taking a census in the year 1906 instead of waiting till 1911. A motion on the subject will probably be submitted to the House of Commons.

THE LANCET.

LONDON: SATURDAY, MARCH 19, 1904.

The Homeless Poor of the Metropolis.

SOME years ago a subject such as this might have been regarded as almost alien to the pages of THE LANCET but the gradual expansion of the subject of public health and a growing recognition of the intimate association which obtains between certain diseases, such as tuberculosis, and poverty, overwork, and under-feeding have opened up channels for inquiry which formerly were regarded as being outside the sphere of influence of preventive medicine. Moreover, the admirable efforts of Mr. CHARLES BOOTH and Mr. B. S. ROWNTREE to call public attention to the conditions under which the poor of this country labour and live have awakened an intelligent interest in these problems. Mr. ROWNTREE'S figures with respect to the number of persons in York who are without the means to purchase the "maintenance of merely physical efficiency" suggest extended inquiries in other directions with a view to ascertain how far these conditions of deprivation are prejudicial to the public health. Indeed, many of the more scientific exponents of preventive medicine are beginning to recognise that in promoting the resistance of the individual they may be doing more for the progress of the public health than by devoting all their energies to coping with special diseases.

In the matter of absolute destitution Mr. SHIRLEY MURPHY has recently made some investigations which are of considerable interest. Most Londoners are aware that night by night the figures of the apparently homeless may be seen huddled together upon seats on the Thames Embankment, in Piccadilly, and elsewhere, but hitherto we have had a very vague conception of the proportion which this social malady bears either to the population as a whole or to that uncertain margin of it which is nightly to be found in the lodging-houses and shelters of this great metropolis. Mr. SHIRLEY MURPHY has therefore attempted, with the aid of the inspectorial staff of the London County Council, to estimate the number of those who are at least so near an actually penniless state as to be unable to afford a night's rest in a bed. The fact that these unfortunate people are bedless does not of necessity imply that they are also penniless. It is not unlikely that in some instances they elect to spend the only pence they possess on food rather than on a bed; the former is necessary for the maintenance of life, the latter is not. It seems that the homeless of London are for the most part to be discovered between 1 and 5 A.M. and that their peregrinations are largely confined to an area bounded by Hyde Park on the west, the further end of Whitechapel-road on the east, High Holborn, Old-street, and Bethnal Green-road on the north, and on the south by the river Thames. The destitute gravitate to this area because within its limits there are numerous and capacious common lodging-houses, Salvation Army and other "shelters," and last, but not least, free suppers. Moreover, the theatres, markets, and printing offices offer opportunities for the casual labourer or the loafer which are not afforded elsewhere. The night selected for the census of the bedless was Jan. 29th last, on which night 23,443 persons slept in the common lodging-houses of London. Of this number 21,058 were single men, 1517 were single women, and 390 were married couples. But before 12.30 A.M. these places contained a larger number than this. It is the custom in the East-end to allow all who wish to do so to congregate in the spacious kitchens of the common lodging-houses, and to enjoy the warmth of the fire. But at 12.30 the London County Council insists that those who are not prepared with the necessary bed hire must pass out into the street. In obedience to this summons there shuffled out on the night of Jan. 29th no fewer than 832 single men, 11 single women, and seven married couples. Those who witnessed this sorry exodus are not likely to forget it. These "turn-outs," as they are called, appear to join one of the streams flowing in different directions to places where the charitable organisations are accustomed to dispense free meals of soup and bread and, having accepted the hospitality of one centre, some of them may be seen making for another centre which opens its doors a little later. After this the homeless walk the streets or seek the shelter of railway arches, staircases, or doorways, and with a downpour of rain the streets empty and the staircases fill. On the night of Jan. 29th, and within the limits above referred to, the officers of the London County Council counted just under 2000 of these homeless wanderers. Are these 2000 persons habitual loafers who, night in, night out, thus rest and are fed, or does the *personnel* of this crowd vary nightly and represent, as it were, the wrecks of the day's work, the units of which differ from night to night? Do the tides of life of these unfortunate people on one day rise above the bed-line and on another ebb below it? Again, does this figure of 2000 represent an average state of affairs for the winter months or is it an indication of abnormal distress? To what, too, would the summer census amount? According to the lodging-house keepers, who have met to consider the situation, there are nightly in their houses many vacant beds, and it is stated that at a lodging-house recently erected by the London County Council to accommodate 600 lodgers at 6*d.* per head per night there have been recently but 90 applicants. Others allege that the dimensions of the army of the destitute are the result of the higher standard insisted upon by the London County Council and of its inflexible rule that, whatever the elements, those who are unable to pay must seek the streets at midnight. But all those who are familiar with the admirable reforms effected by the London County Council in the lodging-houses of the metropolis will be in no hurry to see the former unsatisfactory state of affairs reproduced.

An extension of the inquiry initiated by Mr. SHIRLEY MURPHY is required with a view to ascertain in what manner the present eminently undesirable state of affairs may be remedied. Those who have read Mr. BRAMWELL BOOTH'S sympathetic and practical letter in the *Times* will be

in agreement with him as to the necessity of further inquiry. The facts that it is alleged that there were hundreds of sixpenny beds vacant on the night in question and that at the Salvation Army shelters, where the beds cost but 2*d*. or 3*d*., from 400 to 500 men willing to pay were turned away suggest that in philanthropy alone will the solution of the difficulty be found. It would have been instructive if the figures of each of the shelters had been furnished. According to Mr. BRAMWELL BOOTH the cost of providing accommodation for these 2000 homeless ones would involve, on the present standard, a capital expenditure of from £80,000 to £100,000 and he suggests that half that sum should be borrowed on the security of the property which it would represent and half should be contributed by the public—i.e., that the whole should, directly or indirectly, be thus contributed. Of course, the question at once suggests itself, What is the difference between this and the Poor-law? But Mr. BRAMWELL BOOTH thinks that if a man can afford only a penny he should be provided with some sort of accommodation. Would he still maintain his point if the man had but a farthing? The problem is one of very great difficulty. Above all, we must not promote degeneration, and it is this thought which makes us hesitate to accept Mr. BRAMWELL BOOTH'S humane and obviously not impracticable proposals. What we desire to know is, whether many of the 2000 are incapable of work. There is need of workers in many parts of the British Empire and a quarter of the sum proposed would transfer these homeless ones to places where they could have both work and a home. There are, too, "labour colonies" nearer home to which those who are physically capable of work might be transported at a very small cost.

O'Duffy v. Jaffe, Surgeon Dentists, Limited.

ATTENTION was called in a letter published in THE LANCET of March 12th, p. 754, to the unfortunate result of the prosecution in Ireland of certain unqualified persons practising as dentists and of the company under the name of which they so practised. It is, of course, well known both to the medical profession and to the public that it has been the policy of the legislature with regard to medicine and dentistry to order the registration of qualified practitioners and to punish those using titles implying registration. In like manner under the Pharmacy Acts for England and Ireland no one may keep open shop for the sale of poisons without qualification and registration and the use of such titles as "chemist and druggist" by unregistered persons is forbidden. The evasion, however, of all such provisions has for long formed a subject for the ingenuity of the quack and the charlatan who are naturally hampered in their efforts to advertise themselves by restrictions upon the use of the most desirable and appropriate titles, and one of the means which the unregistered person has adopted in these circumstances seems to have been suggested by the development of the law of limited liability and by the legal recognition of what are known as "one man companies," a term the meaning of which is obvious.

The quack has found it easy to obtain the number of signatures necessary for registration; he has selected such a name as that in the heading of this article, possibly incorporating his own patronymic, and under it he has carried on dentistry or whatever form of practice he may have chosen. This he has done and no doubt will do still more in the future, relying on the contention that a joint-stock company cannot be registered as a medical man, a dentist, or a pharmaceutical chemist, and that consequently it cannot by the use of any name or title imply that it is so registered. This view has been before the courts before and has now been upheld by the King's Bench Division in Ireland which has ruled that the word "person" in the Dentists Act, 1878, relates only to an individual and does not embrace a corporation or company and that a company by assuming a name which includes the words "surgeon dentists" does not become liable to a prosecution under the Act for using a name, title, addition, or description implying that it is registered under the Act. This decision is in accordance with previous ones in England and in Ireland[1] and, in so far as it is undesirable for trading associations of laymen to be formed for the purpose of practising medicine or dentistry, or for the sale of drugs by the agency of their nominees or employés, these cases make it clear that alteration of the law is necessary. But the JAFFE case and the others referred to (which were concerned with the sale of drugs) do not go so far as to give entire immunity to the unregistered person, although the company which he registers may as such be unassailable. The London and Provincial Supply Association and Boyd and Co. both employed qualified persons to keep their shops and to compound and to sell their drugs and in the former case the qualified person was a shareholder in the company. It was held in that case that whether the word "person" in a statute could be treated as including a corporation depended upon consideration of the object of the statute and that the defendant associations were not liable to prosecution as if they had been persons, but it was at the same time pointed out by the House of Lords that if the persons actually dispensing poisons were found not to be registered they could be prosecuted for the offence as individuals and that in this way the public would not be without protection. Looking at the JAFFE case from this point of view we might certainly have expected to find that any unregistered person of the name of JAFFE, or of any other name, pretending to practise dentistry would have been convicted as a matter of course in a court of petty sessions upon proof that he performed his operations and received payment for them in a house with such an inscription on the door as "JAFFE, Surgeon Dentists, Limited."

Those responsible for the prosecution on behalf of the Irish branch of the British Dental Association left nothing undone, so far as we are aware, in order to attain this end, for they summoned two individuals as well as the company. We do not know what the evidence may have been as to one of them, M. L. JAFFE, but as to the other, distinguished as S. JAFFE, it was proved that a man went to a house with his daughter and saw a person upstairs who, in reply to a

[1] The Pharmaceutical Society *v.* the London and Provincial Supply Association, Limited, 5 App. Ca. 857. The Pharmaceutical Society of Ireland *v.* Boyd and Co. (1896), 2 I. R. 394.

question, said that he was the dentist and who afterwards extracted a tooth from the girl. He received for this a fee of 2s. 6d. and gave a receipt for it signed "S. JAFFE.' The house had over its door the inscription "JAFFE, Surgeon-Dentists, Limited," and on a brass plate at the side of the door the words "London and New York Dental Institute, conducted under the supervision of Messrs. JAFFE, Surgeon Dentists, Limited." There was also evidence of a newspaper advertisement of "JAFFE, Surgeon Dentists," from which, apparently, the word "limited" was omitted. With this evidence before them the Limerick magistrates were of the opinion that the defendants did not either of them personally take or use the word "dentist" or any other term implying registration and they dismissed the two complaints with £1 costs in each case. This was a finding of fact and as the defendant's counsel pointed out at the hearing of the appeal it was not open to the court to review it. We cannot do more in criticising it than say that local magistrates do, not infrequently, arrive at conclusions from which other people differ, and that we hope that such a finding will not have the effect of preventing other prosecutions in similar circumstances elsewhere. In the *Times* of Jan. 9th will be found the report of a case heard at the Bow-street police court where the prosecution of an unregistered person practising dentistry was based upon the insertion of advertisements in newspapers under the name "Dental Institute, Limited." This was clearly not so strong a case as that heard at Limerick but Mr. FENWICK, the magistrate, convicted the defendant as an individual, although he recognised that the company, registered for the purpose of evading the Act, could not be held to have committed an offence under it. This, again, was a finding of fact against which successful appeal would not be easy and the conclusion to which these two cases lead us is that the registration of a company for the purpose of sheltering unqualified practice affords but imperfect protection to him who uses the device. He may be convicted of using a name or title implying that he is registered or that he is a practitioner recognised by law if there is evidence to show that he has done so, whether the name or title so used forms part of the registered name of a company or not. The question is one of fact for the bench and some prosecutions may fail where others succeed. On the other hand, in order to prevent companies from engaging in medical or dental practice under speciously selected names legislation is undoubtedly needed but to the protection of the unwary against quackery the legislature is not easily moved.

The Treatment of Operation Wounds.

THE recent Lettsomian lectures of the Medical Society of London were of no little interest for they were the well-considered opinions of an acute surgical mind on the most important problem in surgery—that is to say, the treatment of operation wounds. Operations nowadays hold the foremost place in the treatment of disease, for in addition to those lesions always looked upon as surgical many conditions formerly acknowledged by all to be in the domain of the physician are now equally certainly handed over to the treatment of the surgeon. Mr. C. B. LOCKWOOD, the Lettsomian lecturer, took as his subject Aseptic Surgery in Theory and Practice, and his conclusions are greatly enhanced in value by the fact that he gives very fully the reasons for his opinions. It is often thought that antiseptic surgery came into the world fully formed like ATHENE from the head of ZEUS and that it was incapable of development and evolution. The case, however, was far otherwise. The first beginnings of antiseptic surgery were based on the idea that suppuration in a wound is entirely the result of the presence of micro-organisms and all the means that Lord LISTER devised and employed were directed to the sole end of excluding so far as possible the entrance of micro-organisms into a wound and of killing all those which might have already gained entrance. The cleansing of the surgeon's hands and of the hands of his assistants, of the patient's skin, and of the instruments and dressings employed was effected by the use of antiseptics. Elaborate means were also adopted to exclude from the wound micro-organisms floating in the air and to destroy those in the wound itself. The employment of solutions of antiseptic substances for flushing the wound and, above all, the use of the carbolic spray were based on the idea that many minute organisms are falling every minute from the air into the wound. It is undoubtedly true that large numbers of bacteria and moulds fall continually into every open wound but experience has shown in the first place that the majority of these are not pathogenic to the human body and the truly pathogenic microbes in the air are comparatively few in number and, in the second place, that the living tissues are capable of dealing with a certain number of even pathogenic bacteria, especially if there has not been left in the wound any non-living exudate in which the bacteria can develop. All the changes which were made in his method by Lord LISTER have been the result of experience. The carbolic spray has disappeared to the great comfort of the operator and his assistants and to the relief of the anæsthetist who in many operations, such as laparotomies, received no small share of the spray. Thus antiseptic surgery has undergone true development, true evolution. It discarded details which were shown by experience to be unnecessary. The dressings were modified and new antiseptics and antiseptic dressings were devised. All these changes were made with one definite idea: to simplify antiseptic treatment without sacrificing the perfection of the results.

Some 15 years after the epoch-making introduction of Lord LISTER'S "antiseptic" method "aseptic" surgery was first heard of as a rival. Without doubt an antagonism was intended between it and the "antiseptic" surgery of Lord LISTER. It was put forward as a new method by which better results could be obtained than those that followed the "antiseptic" practice, and many, even in the medical profession, have imagined that there is some essential difference between the two methods, very much in the same way as in more recent times an enthusiastic but unknowing public hailed with enthusiasm the introduction of the "bloodless" method of LORENZ for the reduction of congenital dislocation of the hip as the dawn of a new era in surgery. Even if all that is claimed in theory for the "aseptic" method were true it would be nothing more than a further stage of evolution

of "Listerism." In the true meaning of the word "aseptic" it is extremely probable that no such thing as an absolutely aseptic wound ever existed. Supposing even that the hands of the operator and his assistants have been freed from germs, that the skin of the patient has been rendered absolutely sterile—and these are suppositions which can probably never be realised in practice—we are yet confronted with the certainty that even in the shortest operation a few organisms at least must fall into the wound. Should the operation be prolonged the number of intruding bacteria must be very great and though formerly we may have overestimated the pathological importance of most aerial bacteria yet they are certainly not a negligible quantity. Finally, it is worth noting that DOERLEIN examined bacteriologically some cases of laparotomy at various stages and in all bacteria were present.

Since, then, an operation in which no germs can possibly gain admittance is almost a practical impossibility, what does "aseptic" surgery mean? It means simply the abstinence from the introduction of antiseptics into the wound. That the skin of the patient and the hands of the surgeon and of his assistants should be sterile is common both to antiseptic and aseptic surgery, as is also the sterility of the instruments. Whether the instruments have been rendered free from germs by boiling or by immersion in a solution of an antiseptic can make no difference if none of the antiseptic employed is carried over into the wound. The nature of the dressings applied is also of but little importance provided that they are themselves free from germs, that they exclude germs from the wound, and that they do not affect harmfully the margins of the wound or the rest of the skin which they cover. There is no reason why the name "aseptic" should not be retained so long as it is recognised that the difference is not one of principle but of means. The Lettsomian lectures were devoted mainly to a consideration of the most valuable methods of making a wound aseptic and keeping it in an aseptic condition. The best modern criterion of the care of a surgeon is the proportion of the wounds inflicted by him which heal by first intention without any trace of suppuration. This can be accomplished only by the most rigorous attention to many minute details, for Mr. LOCKWOOD well says that "every operation is a delicate bacteriological experiment." To test the efficacy of the methods employed for sterilising the skin of the surgeon's hands Mr. LOCKWOOD snips off with scissors a small portion of skin after the hands have been prepared for operation and this is dropped into a culture tube. Should a colony appear there is proof positive that the means employed were not effective in rendering the skin sterile. In this way a fairly accurate knowledge can be gained of the value of the various methods of cleansing the skin. These methods are numerous and a few years ago CARL HAEGLER wrote a book of over 200 pages on the disinfection of the skin. It is well to bear in mind that the elimination of every unnecessary pair of hands lessens the danger of infection, therefore the surgeon alone should handle the instruments, the ligatures, the sutures, and the dressings. Mr. LOCKWOOD does not like gloves in an operation as they seriously impair the sense of touch and he has found it practically impossible to complete an operation without tearing or puncturing the fingers of the gloves. The most suitable materials for sutures and ligatures were discussed and Mr. LOCKWOOD expressed the opinion that it is advisable to use catgut for the control of hæmorrhage in all septic wounds in preference to materials which do not speedily soften and disappear. Sponges and drainage and dressings were also passed in review. Mr. LOCKWOOD further supplied statistics of the results which he had obtained in his operations; he showed in what proportion of cases he had succeeded in preventing any manifestation, even the slightest, of sepsis in wounds, and the improvement in this respect which had followed a still greater attention to detail. It is on this care bestowed on the minutiæ of an operation that success in the treatment of wounds depends whether the method be "antiseptic" or "aseptic." Any advance in the future can only be made by an even more careful study of the modes in which septic organisms find entrance to wounds.

The Sale of Whisky.

IN THE LANCET of Jan. 9th, p. 109, we announced that an all-malt whisky Bill was to be introduced into Parliament this session. On March 7th a Bill "to amend the law relating to the sale of whisky and to provide for the marking of casks and other vessels containing whisky" was presented to the House of Commons by Sir HERBERT MAXWELL, supported by Colonel KENYON-SLANEY, Captain BALFOUR, and Mr. J. E. GORDON. The practice of substitution in the spirit trade prevails to such a scandalous extent (a fact to which we have repeatedly drawn attention) that it is time some serious steps should be taken to check it. Only this week in an action brought in the King's Bench Division it was stated by the person who brought the action who was the manageress of a public-house, that the reason why she was dismissed was because she complained "of the mixing of bottle whisky and brandy with spirits from the Mile-end distillery." Two barmen further alleged that a bottle of whisky of a well-known firm was turned into six bottles by the aid of Mile-end whisky. The jury, however, did not give credence to these statements as they gave a verdict for the defendant. The Sale of Whisky Bill represents the first attempt to bring legislative control to bear upon the sale of substitutes for malt spirit and, so far as we understand its terms, the Bill should be effective at least in securing to purchasers of whisky a clear statement as to whether the whisky supplied to them is a spirit made from barley malt alone or is in part a spirit made from unmalted grain. In considering the health aspects of this proposed measure we are bound to recognise that whisky is a very popular alcoholic stimulant; deplore that fact as we may, it has to be faced. Bad as, generally speaking, we must recognise the prevalent practice of whisky drinking to be, we cannot leave out of consideration the question as to whether the spirit generally supplied is of good quality and whether it is that which it pretends to be or that which its name implies.

The consumption of alcohol being a terribly serious factor in the health of the nation it is the duty of the nation to insure that the forms of alcohol which it chooses to drink are at least honestly described and are as free as possible

from deleterious ingredients. There is a marked difference between the physiological action of spirits derived from different sources and this difference is probably to be ascribed to substances other than alcohol. The potentialities of these substances for good or for evil depend upon the materials from which the spirit is produced. When we reflect upon the great number of raw materials from which alcohol may be prepared it is not altogether surprising that this product of distillation should vary widely in regard to its physiological effects. In short, upon these raw materials depends the nature of the by-products which may contribute to the maddening effects of "drink" or which may, on the contrary, even modify favourably the action of the alcohol. Whatever may be the precise explanation of these opposite effects there seems to be a general agreement that age is essential in order to reduce spirits to a state fit for consumption. Initially, of course, an all-malt spirit is impure because it contains certain by-products of distillation and the action of a freshly distilled spirit is physiologically bad. Even genuine malt whisky must be matured, whereas grain spirit fresh from the patent still is very pure alcohol, featureless as regards flavour, and consequently age can have no advantageous change to effect in it. The fact that patent spirit does not require maturing is one very good reason—though it is not the only reason—why grain whisky is cheaper than malt whisky; it contains no by-products which long storage can modify. Grain whisky, therefore, either has to be flavoured by adding a small proportion of full-flavoured malt whisky, or else the expedient of storing it in sherry casks in which malt whisky has been ripened is resorted to. It is greatly to be regretted that the proposed Sale of Whisky Bill contains no reference to the age of the spirit. It seems to us that it avails nothing to the consumer to be sure of getting all-malt spirit when he asks for it if he cannot at the same time receive some guarantee also as to its age. The whole object of the Bill would be destroyed if, in compliance with its clauses, it were possible to supply true malt whisky so immature as to be injurious to health. The detractors of all-malt whisky might be expected for their own purposes to supply what was asked for—namely, pure malt whisky—at the same time taking care to offer an article which, though genuine, could lay no claim to the very important qualification of age. The public would complain and the obvious answer of the grain whisky dealer or blender would be, "I told you so, blended whisky is best."

We cannot anticipate that the dealer in grain whisky will object to Sir HERBERT MAXWELL'S Bill. Practically all it requires is that casks, bottles, and taps on the counter shall be honestly labeled "malt whisky" or "grain whisky" as the case may be, the former term being used to mean spirits manufactured from barley malt and the latter spirits sold as whisky other than malt whisky. It is obvious that the blender cannot object to this requirement, since he is never tired of telling the public that grain whisky or a blend of grain and all-malt whisky is much more wholesome than a pure malt spirit, although, oddly enough, he is careful never to record upon the label of the bottle the fact that the whisky which he sells is blended with a large proportion of grain spirit. The Bill would give protection for the sale of pure malt whisky as the Margarine Act does for the sale of genuine butter. The Inland Revenue authorities know full well under the existing law the materials used in each distillation and they have by means of the permits or certificates required for the removal of spirits and the stock books which have to be kept by rectifiers, dealers, and retailers the information necessary for tracing the whisky until it reaches the retailer. The coöperation, therefore, of the public analyst and the Revenue authorities should insure honest dealing in the sale of whisky. We presume that it is considered that brandy may be left to take care of itself and that owing to a successful prosecution under the Sale of Food and Drugs Act at Glasgow where a dealer was convicted for selling a spirit as brandy which analysis proved to be not genuine, no further legislative machinery is needed. Difficulties, however, are certain to arise as further proceedings are taken in other parts of the country, chiefly with regard to the question of the power of analysis to deal with the matter. We are by no means sure that, if a sample of brandy was taken under the provisions of the Sale of Food and Drugs Act and was shown to be not genuine and an appeal to the Government referees was made, they would undertake to give an opinion; they might refuse on the grounds that chemical analysis was not sufficiently advanced to enable them to do so. We have already expressed the belief that by paying more attention to the chemical composition of spirits analysis will be found to be a trustworthy means of differentiation. We heartily approve the object of Sir HERBERT MAXWELL'S Bill but at the same time we strongly urge upon him the desirability of making it more comprehensive, so that, in fact, it will be a Bill to amend the law relating to the sale of all spirits.

Annotations.

"Ne quid nimis."

THE SOCIAL PROBLEM IN JAPAN.

WITHIN the past 40 years, roughly speaking, Japan has changed from a mediæval and feudal country to one imbued with all the advances of modern Western civilisation, a point which has been pressed home to European countries with great force since the outbreak of the war with Russia. But modern civilisation, as we know from bitter experience, may bring curses as well as blessings in its train and we are led to wonder whether the route of Japan's triumphant progress has not been strewn with some of that human wreckage which in Europe has ever marked the path of empire. Light is thrown upon this question in a recent work, "Le Japon, Politique, Économique, et Social," by Dr. Henry Dumolard, a former professor in the Imperial University of Tokio. Since 1868, when the present Emperor was crowned, the whole manner of life of a large proportion of the people has changed. In the words of Dr. Dumolard "luxury has enormously increased among the upper and middle classes and as a consequence there has ensued an inequality which daily becomes greater and a separation always growing more profound between the different elements of society. Under the hard effects of these changes the good nature of the people has disappeared and their classical courtesy and gentle manners have given place to the Western ways, for in Japan, as elsewhere, the struggle for existence develops egoism and cruelty." Japan, therefore, is now faced with

a "social problem" the aspect of which is, alas, only too familiar to us. The old relation of master and servant living under the same roof and working together according to their respective capacities in the production of those quaint works of arts which we have come to regard as so characteristic have passed away and the flotation of companies has given rise to the building of immense manufactories where thousands of workpeople are aggregated under the direction of salaried officers whose interests are those of the shareholders. Women and children are extensively employed, "sweating" with its elements of small pay, long hours, and unhygienic surroundings is rife, and the depth of poverty to which some of the inhabitants of the large towns are sunk is appalling. At Osaka, the "Manchester of Japan," of the 58,000 workers 13,000 are children under 14 years of age. Certain industries, for example the making of matches and mats, employ almost entirely children of seven or eight years who work 12 hours a day. In the silk and cotton manufactures women from the country districts, enticed into the town by misleading representations, are engaged under agreements to work 12 or 14 hours by day or night, since the cotton mills run continuously for seven days a week, except that they are allowed to abstain from work for two days in each month. These women receive pay at the rate of 2½*d.* per day of which 2*d.* is retained for food so that their net weekly earnings amount to 3½*d.* In some of the silk factories, as there is no legal limit of time, persons of both sexes and all ages work 17 hours a day. It is consequently not surprising that pauperism is becoming in Japan a matter urgently demanding attention. There is, indeed, under consideration by the Houses of Parliament a species of Factory Bill, but it appears to have little chance of passing except in such a form as to render it practically ineffective. As yet Japan has but a very imperfect imitation of the complicated system by means of which relief is afforded to the needs of the indigent in this country. An ordinance of 1872 charges the State with an allowance for foundlings under 13 years of age, while another of 1873 imposes upon the separate departments the obligation of succouring urgent or deserving cases of poverty. The allowances made are of rice or its equivalent in money. A further ordinance, by the Minister of the Interior in 1883, makes provision for the care of those suffering from contagious diseases. In addition to these resources there are 106 departmental hospitals and three supported by the State. Fortunately these measures are supplemented by private charity which has erected 371 hospitals and founded benevolent societies of which the most noteworthy is that of Akita known as Kan-on-kō which since its establishment by the Prince of Akita in 1830 has relieved over 4,000,000 of the poor. In 1892, after being for some time under Government control, this society obtained a charter which placed it on a more satisfactory basis. It is now managed by a small body of directors and administrators who arrange for the supply of food, clothing, and fuel to deserving cases in the town of Akita, while help, in the shape of information, tools, or small sums of money, is also given to those who are in search of work. While there is thus a certain amount of similarity between the Japanese and the European methods of dealing with the problems raised by modern conditions of life it is not likely that Japan will follow very closely in the footsteps of the West. For centuries throughout the greater part of Europe Christianity has guided more or less directly the conduct of political and social affairs, but Christian ideals seem to be wholly foreign to Japanese modes of thought and Japan may therefore be confidently expected to deal with her economic difficulties in her own way with results which can hardly fail to be of the greatest interest to sociologists elsewhere.

LOVE A DISEASE.

THE bright idea, now for the first time engrossing the quidnuncs of the halfpenny press, that "Love is a Disease" has the sanction of venerable antiquity. Apart from the Greek and Roman classics it is a commonplace of the seventeenth century writers on medicine, such as the learned German Gregorius Horstius who in a long academic dissertation on the nature of love showed it to be a mental disorder, while one of his opponents spoke of it as a result of poisoning by philtres, and yet another, Christopher Bilitzer, averred that the best physicians could diagnose the disease from the action of the pulse and reminded his audience—for the erudite disputants were being listened to by the nobility and gentry of Giessen—that Galen himself after observing the pulse of the wife of Menippus discovered her to be in love with one Pylades and by his professional discretion was able to restore her to a better state of mind. Horstius published his thesis in 1611 and it was republished in the great folio edition of his works in 1661. The idea was then quite familiar, for in 1614 Lamandus had followed Horstius with a neatly entitled work, "De Natura Amoris et Amantium Amentium Cura," while in 1623 Ferrand in Paris published a book on the "Malady of Love, or Erotic Melancholy." The Dutch and Flemish painters of the latter half of the same century found in "love-sickness" a favourite subject. Some of the paintings of ladies suffering from this disease are accurate portrayals of the anæmic condition. Of course, none of these writers and painters had as yet suspected that there is a bacillus of love, though Cupid's arrow, which is as old as mythology, is certainly its antitype.

DAKHYL v. LABOUCHERE.

THE recent libel action against *Truth*, if it has had no other satisfactory result, will have placed on record the methods of the Drouet Institute and of the advertiser of cures for deafness as proved by sworn testimony. If persons who read the evidence of such witnesses as Mrs. Welch and the gardener Binnie choose to correspond with the Drouet Institute or with other advertisers of cures for deafness or other ailments, to state what they believe to be their symptoms upon paper, and without seeing their advisers to pay them for advice and treatment, they will expend their money and their time without having any right to complain or to claim sympathy when the result proves unsatisfactory. The former of the two witnesses taken as examples, a poor old woman evidently of but little education, spoke pathetically in the witness-box of the £6 which she had taken from her hardly earned savings in order to pay for a diagnosis which assigned to her among other ailments an affection of the nose defined as "oligosmia" and for gargles and medicines which were useless. Fortunately, she consulted in time a young medical man who was so struck with her serious condition that, unable to get her into a hospital, he had a bed made up for her in his own house. She owes him a heavy debt of gratitude. The other witness, Binnie, a working Scotch gardener, had paid £10 and among his ailments as diagnosed for the Drouet Institute was a disease called "eruptive eustachytis." He had a large perforation in the drum of one ear and a small one in that of the other, and after deriving no benefit from the Drouet Institute he consulted a medical man, with the result that subsequent suitable treatment afforded him relief. He had apparently parted with his £10 between July and October. It clearly is not economy which prompts people to seek cures from such organisations as that named, or else the persuasive advertisement and the still more persuasive letter overcome the scruples of prudence and the patient having once begun continues to pay, much as those who gamble at "bucket shops" keep increasing their

"cover" unable to muster the resolution necessary to close their accounts and "to cut their losses." Those who desire to comprehend the danger, as well as the waste of money, entailed by persons putting themselves into the hands of those who advertise "remedies" for disease will find the information that they need in the evidence of the medical men called on behalf of *Truth*. It is, however, too much to expect of human nature that men and women will disregard specious advertisements or be warned by the fate of others. Those who wish to be deceived will be deceived in the future as in the past and the system which the law sanctions will probably continue unchecked. A few will suffer each year in consequence of it: a few will no doubt die, as the witness Welch presumably would have done had she not at length put herself under medical treatment. Had she done so her evidence would not have been given on behalf of the defendant in the late action and his case would have been rendered weaker instead of stronger by her death. Very little is heard of the harm that is done but the cures, or fancied cures, are magnified by "testimonials" and blazoned abroad in advertisements. Our contemporary has failed to justify so much of the attack in its recent article as was personal to the plaintiff to the satisfaction of the Lord Chief Justice and a jury but we may still congratulate it on the uncompromising attitude which it has always maintained towards a system which is as dangerous to the public as it is detestable to the medical profession and we may still hope that the publicity given by the recent trial to the evils that ensue may have some effect in diminishing the number of victims. As the editor of *Truth* has obtained permission to appeal it would be unbecoming for us further to discuss the case at present.

HAS THE CHOICE OF A DRINKING VESSEL A PHYSIOLOGICAL BASIS?

THE shape, size, and material of the drinking vessel appear to exercise a peculiar influence over the zest with which drinking is enjoyed. To quote an example, few would for choice drink beer out of a tea-cup or tea out of a tumbler. There is something more, surely, than the mere association of ideas in this matter. Some persons maintain that drinking beer from the silver or even pewter tankard is the only way of realising to the full the palatable qualities of malt liquor, others prefer the brown or stoneware mug, while all are unanimous in condemning the plain and especially thick glass tumbler for the purpose. There would appear to be something happy about the partnership between metal and beer. Possibly there are infinitesimal traces of metal in the beer which enhance its taste or possibly a small electrical condition is established which freshens the liquid; at any rate, the metal, be it silver or pewter, seems to be an attractive receptacle for effervescing beverages, for there are even those who prefer to drink champagne from a silver cup. It is difficult to imagine, however, anyone choosing a metal cup for a draught of claret or port. Some people again are whimsical about the thickness of the lip of the drinking vessel, declaring that a good wine is spoilt which is put in a thick-lipped wine-glass. Thin-lipped glasses would appear to help the sense of appreciation of a delicate wine, but for what reason it is not easy to see unless it be that the sense of taste is keener when the mouth is nearly shut. Certainly the act of sipping cannot be indulged in with the mouth extended and sipping is distinctly a connoisseur's practice. There are other points in regard to the influence which the shape and kind of drinking vessel would seem to have in making its contents more or less attractive. Thus there are the conical glass, the thistle-shaped glass, the funnel-shaped glass, the clear cut glass, and the plain glass, all selected for a particular wine; and, lastly, there is the wide, shallow, thin-lipped glass out of which it used to be the custom, and it is not yet in abeyance, to drink champagne. The reason for selecting the shallow glass for champagne might possibly have been to encourage the sparkling quality of the wine and an extension of the idea is seen in the hollow stem of some champagne glasses. The holding of such a glass by the stem between the fingers imparts a certain amount of warmth to the wine in consequence of which the disengagement of gas is stimulated. Such an arrangement, however, is objectionable as it is almost impossible to clean the hollow stem, in which dirt is particularly likely to accumulate. There would be nothing gained by placing a still wine in the shallow champagne glass and it is doubtful whether champagne is better for being in such a glass since the wine is calculated soon to lose its sparkling quality and to become "flat." We need not stop to condemn coloured wine-glasses, they are not beautiful themselves and they conceal the beautiful colours of the wines. It can hardly be disputed, and it is of interest to reflect, that the style of vessel in which a beverage is contained has some subtle influence upon the extent to which the drinking of that beverage is enjoyed. It can scarcely be a purely psychological process any more than is the fact that the saliva and gastric juice begin to flow as soon as attractive food is within sight and the digestive functions commence before the act of ingestion. The "mouth-watering" and the "smacking of the lips" are well understood expressions and probably have a definite physiological significance.

RECENT OBSERVATIONS ON KORSAKOFF'S DISEASE.

SINCE the late Professor Korsakoff of Moscow drew attention 15 years ago to the disease designated by him as "psychosis polyneuritica" various writers have published records of a considerable number of cases of this disease. Among the more recent contributions attention may be drawn to the clinical observations on Korsakoff's disease published by Dr. Sydney J. Cole of Wilts County Asylum in the *Journal of Mental Science* for January and to a study of Korsakoff's disease by Dr. Serge Soukhanoff and Dr. Andre Boutenko of Moscow published in the *Journal of Pathology*, vol. iv., 1903. Dr. Cole points out that the disease may occur in the absence of recognisable symptoms of peripheral neuritis, that its chief etiological factor is alcoholism, and that it stands in very close relationship to delirium tremens. Many cases of illness intermediate in grade between alcoholic delirium tremens and Korsakoff's disease have been recently recorded, especially by Jolly and Bonhoffer. Dr. Cole, basing his conclusions on the study of about 30 cases of Korsakoff's disease which had come under observation during the past five years, states that "in all these cases there was a history of alcoholism and in all but two there were evidences of neuritis ranging from pronounced paraplegia ..... to tenderness of the calf muscles with diminution of faradic excitability." The following two cases are selected from the list published by him. In Case 1 the patient was a woman, aged 43 years, married and addicted to alcoholic habits. On admission to Colney Hatch Asylum in July, 1901, she was talkative, excitable, and vivacious, but readily moved to tears. Her memory was very bad, especially for recent events, her ideas of time and place were deranged, and she had illusions as to the identity of persons. To every question she gave a prompt answer, usually incorrect, and she was much given to "romancing," talking of (imaginary) journeys and adventures which she had just gone through. Her intelligence and judgment were very faulty and she continually contradicted herself. There was

some unsteadiness of gait with tenderness of the calf muscles, her speech was slightly stammering, and there was tremor of the facial muscles. Weakness of the legs grew more marked and distinct polyneuritis with muscular atrophy of the affected muscles supervened. The knee-jerks were absent but the cutaneous plantar reflex was lively. Her mental confusion grew worse and she remained bedridden with neuritis for some months, after which a slight improvement set in. In seven months distinct improvement began to show itself, memory began to improve, her physical weakness and incapacity disappeared, and in June, 1903, after a year's steady improvement she was discharged from the asylum as recovered. In Case 2 the patient was a man, aged 63 years, a cab-driver. He was admitted to Colney Hatch Asylum four weeks after the onset of his illness, which was probably a mild mental delirium, in the course of which he would get out of his bed at night, wander aimlessly about the ward (of the workhouse infirmary), stating that he heard cab bells ringing and demanding fares from the other inmates on the ground that he had just driven them in a cab. Here was an example, adds Dr. Cole, of an "occupation delirium," a very characteristic feature of Korsakoff's psychosis—viz., defect of observation and memory, illusions as to the identity of persons, false ideas as to his relation to time and space, and pseudo-reminiscence. His gait was unsteady and ataxic and the knee-jerks were exaggerated. There was profound loss of memory for recent impressions extending back for many months. After several months' stay in the asylum he began to improve slightly but a permanent degree of mental defect remained. Dr. Cole points out that in almost all his cases the amount of mental derangement as to the patient's position in regard to his surroundings was such as to constitute a marked delusion. His waking life was quiet and dream-like; he lived in the past and had no memories of recent events. In a case recorded by Liepmann this loss of memory was more far-reaching and extended back to about 30 years. Dr. Cole concludes by emphasising the paramount influence of alcohol as an etiological factor. Dr. Soukhanoff and Dr. Boutenko, in their contribution already referred to, state that Korsakoff was not only the first psychiatrist to draw attention to the disease but published the largest number of studies on the subject. His teachings had been accepted by Regis, Seglas, Ballet, and others in France; Jolly, Bonhoffer, and Wernicke in Germany; Krafft-Ebing in Austria; and Percy Smith and Turner in England. They also give statistical tables as to age and sex showing that the fourth and fifth decades of life are most frequently affected with this disease; that it is rare before the age of 20 years or after the age of 60 years. As regards the sexes, while the majority of cases in males occurred between the ages of 40 and 50 years, the disease was most prevalent in women between the ages of 35 and 40 years.

THE "PAINFUL PRONATION" OF CHILDHOOD.

IN a recent number of the *Gazette des Hôpitaux* of Paris Professor A. Broca has drawn attention afresh to a condition of no little practical importance. The patient, who is always a child, after a slight injury keeps the arm hanging down by the side, the elbow is slightly flexed, and the forearm is pronated so that the thumb touches the side of the thigh. Any attempt to change from this position is resisted with cries and evidently gives rise to severe pain. The condition has been described by Daverney, Malgaigne, and Chassaignac, and more recently by other writers, but there has been much uncertainty as to the exact lesion present. So complete appears to be the loss of use of the limb that Chassaignac attributed the lack of movement to some lesion of the nervous system. A careful examination of a case shows that the want of mobility of the limb depends entirely on a fear of pain, the seat of which is in the neighbourhood of the elbow, there being especial tenderness over the head of the radius. The mode of origin is wonderfully uniform. It is produced by sudden traction on the hand. Often there is a history of a fall and the injury is attributed to this but it is really produced by the effort to raise the child from the ground by traction on the forearm. The age of the patient is nearly always under five years and in most of the cases under three years. Of 189 cases only 11 were more than five years old and 141 were under the age of three years. The injury occurs in young children because they are lifted up steps or on to a pavement by the hand of the mother grasping the child's hand. Of 130 cases 80 occurred on the left side and Professor Broca considers that this is due to most people leading a child by their own right hand and so grasping the child's left hand. Of 207 cases 137 were girls and 70 were boys but Professor Broca offers no explanation of this preponderance of girls. The treatment is extremely simple. Even if nothing be done, in a few days the child's arm will have regained its mobility. However, the condition can be immediately put right by a very simple procedure. The surgeon takes the child's hand in his left hand and extends the elbow and then sharply supinates the forearm. Then he bends the elbow while he presses firmly on the head of the radius with the thumb of the right hand; at the same moment a "click" is heard and the child's arm becomes perfectly mobile, the movements being restrained only by the remembrance of the pain he has already suffered. This rapidity of recovery shows that there can be no question of fracture of the neck of the radius, as has been suggested by some. Denucé has suggested that the pain is due to a fold of synovial membrane being caught between the annular ligament and the transverse ligament but this is very unlikely. It has also been suggested that the bicipital tuberosity in extreme pronation passes behind the outer border of the ulna and finds it difficult to return. This theory, also, is far from probable. Professor Broca believes that the lesion present is a subluxation forwards of the head of the radius and he thinks he can feel a slight prominence anteriorly. Unfortunately, a skiagram affords no information, for both the capitellum and the head of the radius are cartilaginous and give no shadows. There is a slight tendency to a return of the condition should the exciting cause recur but Professor Broca considers that after reduction no splint nor even a sling is needed.

BRAKES FOR TWO-WHEELED CARTS.

IN the early hours of Friday morning, March 11th, an accident occurred in London which was fortunately attended with no loss of human life although it involved a certain destruction of property and the loss of a horse. At about 3 A.M. a horse drawing a cart loaded with building rubbish was being led down St. James's-street when from some cause it became frightened. The carter being unable to control it let it go and the horse and cart going fast down the hill failed to make the complete turn and dashed against the parapet of the Oxford and Cambridge Club. This gave way and the horse and the shafts of the cart fell into the area, some 20 feet below the street level. The unfortunate animal was killed. Some years ago a similar accident happened in Bedford-street when the fore part of the horse disappeared into Messrs Dent's window and cellar in the Strand. We have never been able to understand why the very simple two-wheeled brake which is universally used for two-wheeled vehicles in France is not adopted here. Now that nearly every part of London is being grubbed up or rebuilt the contractors' carts which are seen about the streets are innumerable and the strain on the horses going down a

hill, such as that of Piccadilly or St. James's-street, is very great. From a merely pecuniary point of view we should have thought that it would have paid contractors to fit their carts with the brake to which we have referred. Such an appliance would save the horses and so would save the contractors' money, to say nothing of obviating the chances of such an accident as that described above with its opportunities for destruction of life and property. But the average Briton is so—shall we say conservative—that he will not use anything new or to which he is unaccustomed. We think that the legislature should step in and should make the use of such a brake compulsory. It is true that some modification would have to be made to allow for the cart being tipped but surely this would not be beyond the powers of our mechanicians.

SENILE FORMS OF MENTAL FAILURE.

THOUGH old age brings with it a decline in mental as in physical power and capacity the alteration is a gradual process and is on the whole unattended by serious mental disturbance. Senile dementia is that form of mental decay occurring after the fifth decade of life, in which various forms of mental disorder of a somewhat grave character manifest themselves. It is very rare before the age of 50 years in men and it is found that at least two-thirds of all patients over the age of 50 years admitted to public asylums are cases of senile dementia. In the *Journal of Nervous and Mental Disease* for February Dr. William Pickett, instructor in neuro-pathology and insanity at Jefferson Medical College, Philadelphia, publishes an article on the subject of the mental decay and disorders of old age in which an attempt is made to analyse and to classify the various forms and to furnish a practical basis for prognosis, the material studied comprising 200 cases—100 males and 100 females. Senile insanities other than dementia are rare; they comprise a delusional form and a melancholic form which are liable to occur, strictly speaking, in the pre-senile period which corresponds with the climacteric period in women (from 45 to 50 years of age) or with a slightly later period (from 50 to 55 years of age) in man. Analysis of the clinical symptoms shows that the following are the general characteristics of oncoming senile dementia: enfeeblement of attention and slowness in the association of ideas, inexact perception of relations to surroundings and to time (disorientation), marked defects of memory (amnesia) for recent events, poverty of ideas, blunting of the feelings of affection, and irritability of disposition with exacting and tyrannical tendencies. The essence of senile dementia is quantitative but irregular reduction of the mental and moral capacities and the degenerative process is usually accompanied by attacks of temporary excitement, emotional depression, and delusion, so that the superficial symptoms of mania, melancholia, and paranoia are simulated, though these affections rarely occur in old age. "Mental confusion of some degree is present in all types of senile dementia; it appears episodically in many (66 per cent. of) cases, being one cause of the familiar street wandering of such dements." The excited, depressed, and delusional types rank next in order of frequency. Physical wasting and weakness are greatest in the common or confusional type and are progressively less marked in the other types mentioned, a point which is of prognostic value. On the other hand, the depressed and paranoid types are of less favourable prognosis as regards the mental life than are the other two types of dementia. The exaltation or ephemeral excitement of some cases is not true mania; "probably, says Dr. Pickett, "true mania never arises in old age." The following table gives a summary of the symptoms and the peculiarities of conduct of the 200 patients investigated. Some of the peculiarities of conduct have a medico-legal interest as the degree of responsibility may be hard to determine.

Symptoms and peculiarities of conduct.	143 cases of the simple confusional type.	17 cases of the excited type.	14 cases of the depressed type.	26 cases of the delusional type.
	Per cent.	Per cent.	Per cent.	Per cent.
Street wandering.	40	24	14	12
Hallucinations.	23	12	64	85
Vertigo.	19	6	14	27
Headache.	8	6	0	19
Night prowling.	8	6	28	8
Suicidal attempts.	6	12	14	16
Exaltation.	8	6	7	42
Delusions of poisoning.	2	18	7	35
Delusions of conspiracy.	2	6	7	46
Other delusions of persecution.	10	24	28	38
Delusions of marital infidelity.	0	6	0	12

The delusional cases are especially important from a medico-legal point of view, as these patients may become troublesome and even dangerous to their families, though when placed in asylums they soon subside into the category of "uninteresting" senile dements. The chief delusions to which they are liable are those of persecution by unseen and malign agencies, poisoning, and marital infidelity, the last of which may cause much distress and trouble to the patient's family.

THE METROPOLITAN STREET AMBULANCE ASSOCIATION.

THE following is an abstract of suggestions approved by the committee of the Metropolitan Street Ambulance Association as the basis of a plan for providing London with an efficient street ambulance service:—

1. That there should be one controlling authority responsible for a uniform and well-organised ambulance service and that that body should be the London County Council.
2. That London should be divided into districts or "accident areas" and that a properly organised service should be arranged in each. This would necessitate the establishment of horse or motor as well as hand ambulances.
3. That the fire brigade and the ambulance services could be most advantageously carried out conjointly.
4. That where possible these ambulances under the control of the London County Council fire brigade should be stationed at, or in immediate connexion with, the principal London hospitals.
5. That the police should be kept efficient in "first-aid" training; should be available, as at present, for rendering first aid to the injured, summoning an ambulance by telephone, and taking charge of the patient until the ambulance and attendant arrive; but should not, as a rule, be expected to accompany patients to home or hospital.
6. That the 800 fire-alarm telephone posts now existing and all other telephones should, if possible, be made available for calling these ambulances and that the police should be instructed in their use.
7. That the experience gained in working such services for many years in such cities as New York, Paris, Liverpool, and many others is more than sufficient to justify the London County Council in undertaking the work in London on a scale large enough to provide adequately for the 13,000 to 15,000 street casualties requiring removal each year.
8. That there should be no charge for the use of the ambulance.

The suggestions, it will be observed, are only set forth as a basis for a scheme and we are not quite clear as to whether the committee suggests that the whole of the work should be undertaken by the fire brigade or only that the ambulances, whether horse or motor, should be kept at the fire stations. But then we see that suggestion 4 proposes that the ambulances should be kept at, or in immediate connexion with, the hospitals. In that case where does the fire brigade come in? Everyone knows how admirably organised is the fire brigade and no doubt the machinery of that body would do the ambulance work excellently but we have not yet heard the brigade's opinion on the matter. If the fire alarm posts and the machinery of the brigade are utilised

it seems to us that there will have to be an increase in the staff and more room provided in the stations for ambulances. Motors would be the best means of traction unless a separate stud of horses were provided, for the ordinary fire-engine horse, though an excellent animal for its own work, is not exactly a suitable form of motive power for the conveyance of a seriously ill or wounded patient.

ROAD-SICKNESS.

THE much-abused sea may claim in these days of fast travelling that the land has its terrors and that in all fairness the measure of blame should be more equally distributed. Since the introduction of the long Pullman dining-car (more especially on the foreign railways which are perhaps not so well laid as some of our chief lines are, though the rate of speed is at times even greater) we have heard of many instances of sickness and nausea closely resembling the forms of sea sickness with which most are only too familiar. Passengers to the Riviera not infrequently fall victims to the peculiar motion of the long bogie carriages which are used for dining and sleeping, a thing not to be wondered at when we consider that there must be very special undulatory risings and fallings in the body of the long car which is only supported at its ends on the peculiar bogie arrangement of the wheels, whilst in rounding sharp curves the long axis of the carriage is in a different direction from that of the mechanism on which it is placed. The pitching and rolling movements which set up *mal-de-mer* are, in fact, though to a less amplitude, imitated in the luxurious wagon-lit, and if it happens that dinner is going on whilst a tortuous piece of the line is being negotiated it is not unlikely that the services of the steward will soon be requisitioned. Road-legs have to be acquired as much as sea-legs, and in the various forms of locomotion, from the jolting omnibus to the quick-stopping tube and air-braked trains, frequent opportunities arise for estimating the varying amounts of agility, clutching of stay-straps, and compensating bodily movements made by the cognoscenti in the particular class of vehicle of which they are for the time endeavouring to form an integral part. That all forms of travelling are tiring is evident from the common tendency to sleep in railway carriages, and the proverbial sleepy state of the country carter is due perhaps not so much to his early rising as to the constant work of the muscles which automatically endeavour to compensate for the surprises of their fellows in the disturbed equilibrium caused by bad roads and weak springs. If a person must live in the suburbs of London the wear and tear caused by daily travelling backwards and forwards are certainly less on the northern lines than upon the southern, with the exception of the South-Western, because of the excellence of the permanent way and the weight of the carriages. The vagaries of the travelling public are curious: some cannot ride except facing the engine or the horses, others cannot travel at all by railway, some have faint feelings when going at a high speed, others are made actually sick, and we have known the utmost confusion caused to some unfortunates by the seats opposite the direction in which the train is moving being occupied, though, curiously enough, the same feeling is not set up when the passenger can have a seat placed parallel with the direction of progress. There is reason to believe that the action upon the eye muscles of the rapidly changing parallax and the quick passage of objects that are met and left have much to do with the production of tired feelings and of headaches caused by long journeys, and great relief is often experienced by simply closing the eyes or by refraining from looking out of the windows, and if reading is to be indulged in the daylight should be chosen and a large and clear type of print selected. The morning and evening papers of the suburban travellers have much to answer for, especially when tempted by the cheapness he indulges in those printed in small type. The question of the cause of sea-sickness—and the same may be said of road-sickness or *mal-de-terre*—has never been quite satisfactorily determined. The blood system of the body is a closed circuit and it has been plausibly suggested that the pitching of the boat and the up-and-down movement of a long carriage like a wagon-lit tend to disturb the balance of the circulatory system somewhat in the same way as the mercury in the barometer rises and falls suddenly with the degree of pitching (not rolling) of the vessel. If this is the case it is not difficult to understand why faintness and sickness are set up and even why morbid apprehensions of travelling may arise. In fact, nothing more calculated to derange the viscera and the nervous system can be well imagined than the oscillatory movements of trains travelling over badly laid roads at high speed. There is a habit now much in vogue of taking very long journeys without any intervals of rest. People are so anxious to "get it over quickly" that they rush through from train to steamer, from steamer to train, without taking the intermediate break which is generally possible and which is so useful for allowing the circulation to regain its balance, the nervous system to quiet down, and the viscera to resume their normal functions. The temptation to get quickly away to other scenes and climes is great and when carried out with reasonable care is very proper, but physicians who have to order invalids abroad for the sake of their health cannot too strongly impress upon them the validity of the German byword—*immer langsam*.

THE PROGNOSIS AND CURABILITY OF EPILEPSY.

A NUMBER of recent and valuable observations bearing on the prognosis, pathology, and curability of epilepsy were contributed by various authors in a discussion on the subject at the New York Academy of Medicine, an account of which is published in the *Medical Record* of Feb. 6th. Dr. William P. Spratling, the medical superintendent of Craig Colony, New York, stated that epilepsy was curable in from 5 to 10 per cent. of cases, "but it required, as a rule, a long-continued course of treatment, never less than two to three years." From carefully investigated records of 1325 cases during the past four years he had found that 34 cases of epilepsy at Craig Colony were undoubtedly cured in that period. Epilepsy was essentially a disease of early life. In 20 of the 34 cases which were cured it began in infancy, in nine it occurred between the ages of 10 and 20 years, in four between 20 and 40 years, and in one after the age of 40 years. Psychical epilepsy was a rare affection, being met with only in four cases among 1325 patients. Of all the types of epilepsy the Jacksonian demanded the earliest treatment. Idiopathic epilepsy required long-continued care and treatment, material improvement being sometimes observed after a year. The epileptic aura occurred in 51 per cent. of all cases, the disturbance being almost invariably a "sensory" aura. There were some varieties of epilepsy which destroyed all the faculties of the mind in a very short time, while others left the mind comparatively unimpaired. The younger the patient when epilepsy manifested itself and the longer the period without proper treatment the more grave and unsatisfactory would be the prognosis as regards the mental condition. Professor Allen Starr, who followed in the discussion, said that those who treated epilepsy in dispensary and outdoor hospital practice knew how difficult it was to accomplish anything in the way of cure—even treatment of the rich under the most favourable surroundings failed to give good results. The vast majority of patients did not recover and only a small

percentage improved. Among 250 consecutive dispensary cases of epilepsy seen and treated by him only one recovered and remained permanently free from fits for several (seven) years. "It was very rare," added Professor Starr, "to see a patient go for a year without either a series of attacks or at least one or two fits." The reason for this pessimistic attitude in prognosis was because epilepsy was a slowly progressive organic disease of the brain associated with congenital maldevelopment of the organ. Many of the patients showed anatomical and mental "stigmata" of degeneracy. He found the closest analogy between Jacksonian epilepsy and idiopathic epilepsy and there were all intermediate states between these two. Dr. L. Pierce Clark, assistant physician at Craig Colony, agreed with Dr. Spratling that a recovery-rate of from 5 to 10 per cent. could be obtained among "colony" patients but that in private practice a higher percentage (nearly 25 per cent.) of recoveries was obtainable. He agreed with Professor Starr that it was an organic disease. Dr. Frederick Peterson stated that 6 per cent. of cases were curable, especially when the epilepsy supervened in adult life and without such associated symptoms as hemiplegia or cerebral softening. Idiopathic epilepsy was, in respect of its periodicity, like dipsomania. Dr. Ralph Parsons took a gloomy view as to the curability of epilepsy and Professor Joseph Collins stated that he thought 10 per cent. of alleged cures was an extravagant estimate. Dr. Leszynsky approved of the "colony" treatment of epilepsy and believed that it would become more popular as public knowledge increased and ignorance died away. Dr. Bernard Sachs stated that the term "organic" disease as applied to epilepsy did not necessarily connote incurability and agreed that from 5 to 10 per cent. represented the average limits of curability under proper care and treatment.

THE INFECTIVITY OF THE TUBERCLE BACILLUS.

THE fifth annual general meeting of members of the National Association for the Prevention of Consumption and other Forms of Tuberculosis was held at 20, Hanover-square, London, W., on March 10th, when Sir William S. Church, President of the Royal College of Physicians of London, made some valuable remarks. He said that the unreasoning and unreasonable dread that some people seemed to have of the infectivity of the tubercle bacillus had been strongly brought to his attention in the course of the last year. That, in his opinion, was to be deprecated and the more so because it occurred among the more or less educated classes who, unfortunately, were influenced by some of the sensational writing on the subject. Many of these persons had kept themselves at a distance from the tubercle bacillus, imagining that that was all that was necessary, and had neglected those proper hygienic measures which place them in a condition to resist the attacks of the enemy. The National Association for the Prevention of Consumption had put two lines of defence side by side. It had recommended general hygienic measures and at the same time had indicated the means by which people might specially protect themselves and the general public from the danger of infection. Sir William Church also referred to the extreme interest with which the medical profession were watching the results of the working of the plan of compulsory notification of tuberculosis at Sheffield, just as they were noting with care what the results were of the voluntary notification of tuberculosis which was proceeding in many other districts. Another point touched on by Sir William Church was the way in which the Journal of the National Association for the Prevention of Consumption had emphasised the view that sanatoriums should be inexpensive buildings, and in connexion with this he made the suggestion that it would be of great advantage if the National Association for the Prevention of Consumption would act as an advisory board to county councils, boards of guardians, and other public bodies upon the important questions of construction, sites, and situations of sanatoriums. He considered that bricks and mortar should not take up vast sums of money when inexpensive buildings would not only fulfil the same object but would do it very much better.

THE medical officer of health of the Cape Colony states that for the week ending Feb. 20th no case of plague in human beings was reported throughout the colony. Plague-infected rodents were found at Port Elizabeth and at East London, but of 254 rats examined during the week in the Cape Town and Harbour Board area none was affected with plague. As regards the Mauritius, a telegram from the Acting Governor received at the Colonial Office on March 11th states that for the week ending March 10th there were three cases of plague and two deaths from the disease. As regards Hong Kong, a telegram from the Acting Governor, received at the Colonial Office on March 15th, states that for the week ending March 12th there were two cases of plague and two deaths from the disease.

Dr. T. W. Eden has succeeded Mr. Alban H. G. Doran as editor of the *Journal of Obstetrics and Gynæcology of the British Empire*. The success which has been achieved since the founding of this journal some two years ago is a testimonial to the merits of Mr. Doran as an editor, his wide knowledge of the literature of obstetrics and gynæcology no less than his linguistic attainments having fitted him exactly for the post. Dr. Eden has no doubt an easier task before him than Mr. Doran had, in that he has to drive a machine that is running and has not to start the machine. At the same time he suffers under the disadvantage of following an editor of unusual attainments. We wish the *Journal of Obstetrics and Gynæcology* a continuance of prosperity.

AT a meeting of the Senatus of the University of Aberdeen, held on March 9th, it was resolved to confer the honorary degree of Doctor of Laws upon Dr. C. J. Cullingworth, obstetric physician to St. Thomas's Hospital, London. A similar degree is also to be conferred upon the Right Hon. C. T. Ritchie, M.P., Mr. William Watson, the poet, Sir George Watt, the officer in charge of the Industrial Museum, Calcutta, and Professor W. Dunstan, F.R.S., the director of the scientific and technical department of the Imperial Institute. The graduation ceremony is provisionally fixed for Wednesday, April 6th.

Miss Caroline Frith, who at the time of her death was a staff nurse in St. Bartholomew's Hospital, has left to the hospital the whole of her residuary estate, of the estimated value of upwards of £2000, to show her appreciation of the benefits which she had received from her training there and of the kindness and consideration accorded to her during her four years' residence in the hospital.

Sir Lauder Brunton has resigned his position as physician to St. Bartholomew's Hospital and has been elected an honorary consulting physician and a governor. Sir Lauder Brunton has been connected for 33 years with St. Bartholomew's Hospital, having been four years casualty physician, more than 20 years assistant physician, and nearly nine years full physician.

THE annual general meeting of the Coal Smoke Abatement Society will be held on Tuesday, March 22nd, at 3 P.M.,

at Stafford House, St. James's, London, S.W. (by the kind permission of the Duke of Sutherland). Sir William Richmond, K.C.B., R.A., will preside.

THE annual general meeting of the Medical Graduates' College and Polyclinic will be held at the College, 22, Chenies-street, Gower-street, W.C., on Monday, March 28th, at 3.30 P.M. Dr. C. Theodore Williams will preside.

ON Wednesday evening next, March 23rd, at 8.30 P.M., Dr. Marmorek will deliver an address at St. George's Hospital upon Antituberculous Serum.

THE country has learned with sincere regret the news of the death on Thursday morning of the aged Duke of Cambridge.

WE regret to have to state that Sir Samuel Wilks has shown signs of weakness since our previous and favourable note of his condition.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE annual meeting of the General Council of King Edward's Hospital Fund for London to receive the accounts and report of the General Council for the year 1903 was held on March 8th at Marlborough House, H.R.H. the Prince of Wales being in the chair. Those present were the Bishop of London, the Chief Rabbi (the Rev. Dr. Adler), Viscount Duncannon, Lord Iveagh, Lord Farquhar, the chairman of the late London County Council (Lord Monkswell), the President of the Royal College of Physicians of London (Sir William S. Church, Bart.), Sir Savile Crossley, Bart., M.P., Sir Joseph Dimsdale, Bart., M.P., the Right Hon. C. Stuart Wortley, K.C., M.P., Sir Trevor Lawrence, Bart., Sir John Aird, Bart., M.P., Sir Henry Burdett, K.C.B., Sir William J. Collins, Sir John Craggs, Mr. Sydney Buxton, M.P., Mr. F. M. Fry, Mr. Albert G. Sandeman, and Mr. Hugh Colin Smith.

In the absence of Lord Rothschild Sir JOHN CRAGGS presented the certified accounts of the Fund for the year ending Dec. 31st, 1903. These showed the details of the receipts to be as follows, neglecting fractions of £1: annual subscriptions, £52,834; contributions to be retained as capital, £16; donations, £8082; grant from the trustees of the London parochial charities for the maintenance of convalescent homes, £1000; contribution from League of Mercy, £10,000; received on account of the Coronation gift, but not included in last year's report, £863; legacies, £3048; income from investments, £27,639. The total receipts for the year amounted to £83,483, and the council's decision to recommend that £100,000 should be distributed among the hospitals and convalescent homes involved drawing upon the reserves to the amount of £18,751. Some particulars of the work of the Fund during the first 11 months of the year were given at an interim meeting of the council held at Marlborough House under the presidency of the Prince of Wales on Dec. 14th, 1903. A report of this meeting appeared in THE LANCET of Dec. 19th, p. 1748, and a full list of the grants and donations made by the Fund for the year was published in our issue of Dec. 26th, p. 1831.

The PRINCE of WALES having moved the adoption of the accounts, Mr. SMITH in seconding the motion, said that as compared with the year 1902 the annual subscriptions in 1903 were £4100 more, the League of Mercy gave £2000 more, and the income from investments was £16,200 more, owing to the munificent gifts of Lord Strathcona and Lord Mount Stephen, though, on the other hand, the donations were less.

Sir HENRY BURDETT, in supporting the adoption of the accounts, said that as treasurer of the League of Mercy it was a pleasure for him to point out that the £10,000 given by the League of Mercy to the Fund last year might be taken broadly as representing contributions of small sums and from this it was evident that small subscribers—in fact, the humbler people of London—were really taking a very practical interest in the Fund through the League of Mercy.

The motion was carried unanimously.

Mr. SMITH, chairman of the executive committee, read the report of the General Council for the year ending Dec. 31st, 1903.

The PRINCE of WALES said: My Lords and Gentlemen, I have much pleasure in moving the adoption of the report for the past year and on the whole I think we may be well satisfied with the results achieved for it could not be expected that the contributions to the Fund would be equal to those of the previous year—that of the Coronation. As I stated at our last meeting in December I regret very much that it has been necessary to draw upon our reserves and I trust that the ensuing year will enable us to provide £100,000 out of income without again having recourse to what may be considered an undesirable expedient. I shall be only echoing the unanimous opinions of the council in expressing our gratitude to all who, whether in large sums or small, have supported the Fund during the seventh year of its existence. As stated in the report, the investments of the Fund now standing in the names of Lord Rothschild and Mr. Hugh Colin Smith, taken at cost, comprise £234,037, while the securities received by the Fund, as valued at date of receipt, amount to £430,218, making a total of invested capital now owned by the Fund of £664 255. This position of affairs may be considered satisfactory. But we must endeavour to improve it. And I think you will all agree that we have already obtained very great encouragement when I tell you that within the last few days, to my surprise and gratification, I have received from a personal friend who desires to remain anonymous a letter which I should like to be allowed to read:—

SIR,—I regret to learn that the assured income of the King's Hospital Fund from investments and other permanent sources only amounts to about £36,000 a year, which is £14,000 a year less than, two years ago, it was hoped the fixed income of the Fund from endowments, &c., would have reached by this time. It is clear to me that there is no better way of benefiting the sick poor of London than by supporting the King's Hospital Fund, and that it is a matter of the greatest importance to the London hospitals generally, as well as to the success of the Fund itself, that it should as speedily as possible be placed in a position to enable it to make an annual distribution among the London hospitals of not less than £50,000. If the King's Fund had an assured income from investments and other permanent sources of, say, £50,000 a year, I believe that it would not be very long before the income from subscriptions and other sources would amount to £100,000 a year, making a total of £150,000 a year available for distribution, and placing the King's Fund in a position to exercise a most beneficial influence and control over the management of every London hospital. To help this most desirable object I have decided to anticipate a provision in my will and instead to hand over to the King's Hospital Fund by way of gift securities representing the capital sum required to provide one-third of the £14,000 a year deficiency on condition that the remaining two-thirds, £9332 per annum, is provided for. This offer to be good and to remain in force till Dec. 31st next, 1904. I do not attach any other conditions to this offer, but would like to express a hope that Your Royal Highness, as President of the King's Hospital Fund, may see your way to prevent any portion of the funds subscribed for the relief of the sick poor being diverted to purposes of medical education. Trusting your Royal Highness may be placed in a position to enable you to avail yourself of my offer.

As a rule I am reluctant to make personal appeals. But, having received this munificent offer, I feel that it is my duty to invoke the support of those who are in a position to follow the example of this anonymous benefactor and so enable us to secure the full results of his generous proposal. The total number of subscribers to the fund is over 4300. To this must be added the many subscribers to the League of Mercy. These statistics are satisfactory, as showing that while we receive large donations the Fund is also becoming understood and, I hope, appreciated by the people. To bring this about was the original purpose of the Fund. I take this opportunity of referring to one particular class of the community from which the London hospitals derive substantial help. I mean the dramatic profession. I sometimes think we do not fully realise how much of their valuable time is gratuitously given by the members of the stage for charitable purposes.

The report, on the motion of the PRINCE of WALES, seconded by Sir JOHN AIRD and supported by the BISHOP of LONDON, was received and adopted.

Lord MONKSWELL then moved a vote of thanks to the Prince of Wales for presiding. This was seconded by the CHIEF RABBI and after His Royal Highness had expressed his acknowledgements the proceedings terminated.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 10th, Mr. HENRY MORRIS, Vice-President, being in the chair.

The Council having been consulted by the Physical Deterioration Committee as to the details of a scheme for an anthropometric survey of the United Kingdom had referred the matter to the Committee on Physical Disabilities and a report was now received from that committee, in which it recommended that the Council should express its approval of the general idea of the scheme as being well calculated to elicit those facts of which a knowledge is essential to the formation of any opinion as to the physical improvement or deterioration of the race, and that the committee moreover believed that the results of the investigation would be of great scientific value and interest. It was resolved to send a reply in the terms contained in the report.

The Council expressed its warm appreciation of the very great services rendered to the Council by Mr. Thomas Bryant as the representative of the College on the General Medical Council for the long period of 13 years. The Council appointed Mr. Henry Morris as the representative of the College on the General Medical Council for five years. The chairman of the Museum Committee reported that Staff-Surgeon C. Marsh Beadnell, R.N., M.R.C.S., of H.M.S. *Powerful*, had presented to the College 13 Filipino skulls collected from the battlefields of Luzon, Philippine Islands. The best thanks of the Council were given to Staff-Surgeon Beadnell for his gift.

The VICE-PRESIDENT reported the delivery of the following Hunterian lectures—viz.: three lectures by Mr. T. Crisp English on the After-Effects of Head Injuries; three lectures by Dr. Arthur Keith on the Evolution and Action of certain Muscular Structures of the Heart (illustrated by specimens from the Physiological Series of the Hunterian Collection); and three lectures by Mr. L. B. Rawling on Fractures of the Skull.

The VICE-PRESIDENT reported that the President had appointed Dr. John Barlow as the delegate of the College to the Congress of the Sanitary Institute to be held at Glasgow in July.

The VICE-PRESIDENT reported that the President had been placed upon the list of vice-presidents of the English organising committee for the International Congress on School Hygiene to be held at Nuremberg in April and that Dr. Clement Dukes had been appointed as the delegate of the College to the Congress.

The VICE-PRESIDENT reported that the College had been invited to send a representative to the jubilee of the University of Wisconsin to be held in Madison on the first five days of the week beginning June 5th.

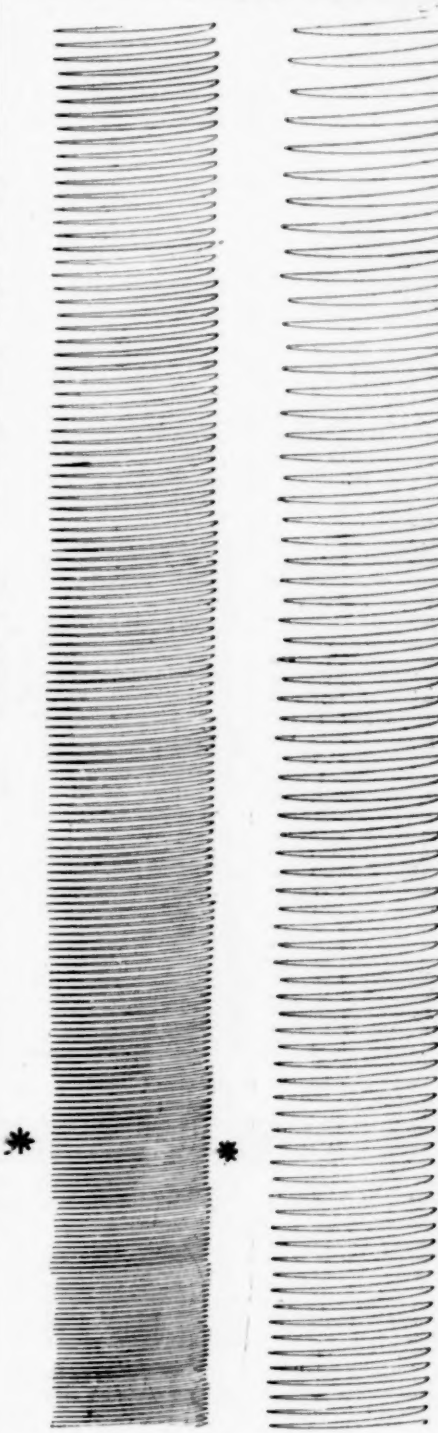
The following letter was read from the Registrar of the General Medical Council, reporting the following resolution adopted by the Executive Committee of that Council:—

That the Executive Committee learn with regret that Mr. Bryant does not contemplate an extension of his tenure of office as representative of the Royal College of Surgeons of England after March 12th, 1904, and desire to place on record their high appreciation of his services in many capacities since his appointment in 1891, and in particular as treasurer of the General Council and chairman of the Examination Committee.

A letter was read from Mr. Morris resigning his membership of the Board of Examiners in Dental Surgery in anticipation of the expiration of his period of office on May 11th. The vacancy thus occasioned will be filled at the meeting of the Council in April. Mr. Morris resigned his seat on the Court of Examiners to take effect at the end of the pass examination for the Membership in April next. The vacancy thus caused will be filled at the meeting of the Council on May 12th and May 4th will be the last day of application.

AN INTERESTING DEMONSTRATION AT CAMBRIDGE.

THE accompanying figure is a reproduction of a tracing taken in the presence of their Majesties the King and Queen on the occasion of their visit to the Medical Schools at Cambridge on March 1st. The experiment, which was conducted in the Pharmacological Department, consisted in the perfusion of an excised rabbit's heart with an oxygenated Ringer's solution by a method slightly modified from that of



The tracing reads from left to right; the asterisks mark the injection of digitoxin.

Langendorff. The record was obtained by a lever attached to the apex of the heart and having its fulcrum at one end so that the upstroke represents systole. The rate of movement of the drum was such that one centimetre of the tracing occupied 15 seconds.

At the spot indicated by asterisks one cubic centimetre of a 0·1 per cent. solution of digitoxin in normal saline, containing a little alcohol to aid in its solution, was injected through a T piece and a typical digitalis action was produced. Their Majesties expressed much interest in the experiment.

ANNUAL GENERAL MEETING OF THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE annual general meeting of the members of this society was held at 31, Craven-street, Strand, London, on March 11th, Mr. JONATHAN HUTCHINSON, the President, being in the chair.

Dr. G. A. HERON moved that the annual report of the council and the balance-sheet and statement of accounts should be received and adopted. He announced that the society had a reserve fund of £1887 and that the total of the surplus funds of the society amounted to £2282. He referred to the resignation by Mr. T. Pickering Pick of the office of trustee to the reserve fund and he announced that the vacancy had been filled by Mr. John Tweedy, the President of the Royal College of Surgeons of England.

The motion was seconded by Dr. R. BOXALL and carried unanimously.

The annual report of the council shows a steady influx of new members into the society and contains the following paragraph which will interest more particularly medical practitioners in the south of London:—

> The action of a London coroner in holding inquests without calling the medical attendant of the deceased as a witness, or intrusting to him the duty of making the post-mortem examination, having excited widespread indignation among the medical practitioners in the coroner's district a committee was appointed by the society to deal with the matter. Ultimately this committee, in conjunction with committees of the British Medical Association, the Medical Defence Union, and the South-West London Medical Society, laid a formal complaint against the coroner before the Lord Chancellor in respect of the above and other procedures, which were considered as not in accord with the provisions of the Coroners Acts. The matter is still *sub judice*.

The following curious case is noticed in the report and the society must certainly be congratulated on the help that it afforded to the member who had applied for assistance:—

> The "member received an anonymous letter from a clergyman advising him to write no more to a girl, whose name was not given, and saying that the writer 'had saved the situation' for the doctor. The member was advised to write to the clergyman asking what he meant and he did so. This letter was acknowledged and the clergyman said that, contrary to his advice, the doctor had again written to the girl. Finally, the secretary of the society wrote to the clergyman insisting upon seeing the letters to which he had referred and saying that the matter could not be allowed to rest. It then transpired that the letters were concocted by a servant girl in the clergyman's house and that they had been shown by her to her mistress. The girl was compelled to make a written confession and apology and to give up all the letters remaining in her possession. The member expressed warm gratitude to the society for its assistance and there is reason to believe that by dealing effectively with the matter in good time the doctor was saved from serious risk of being involved later on in a scandal which might have affected him very prejudicially in his professional career."

The following passage in the report sounds a note of warning:—

> A claim for damages was made against a member by a patient whose photograph had been published in illustration of a paper appearing in a medical periodical. The matter was taken in hand by the society and eventually the claim was allowed to drop.

From among many interesting cases the following is selected to show the successful results of the firm action followed out by the solicitors to the society, Messrs. Le Brasseur and Oakley:—

> A clergyman wrote to his usual medical attendant a letter of a libellous character in reference to a member who had been acting as *locum tenens* to the doctor and who had offended the reverend gentleman's susceptibilities. An apology was demanded by the society. The apology made was not deemed sufficient and a full withdrawal and apology was drafted for the clergyman and he was allowed the alternative of signing it or defending an action for libel. He signed it as drafted.

The following intimation in the report gives an idea of the active manner in which the society is rendering assistance to those concerned:—

> Information with regard to undesirable medical institutions is valued by the society and should be forwarded to the secretary in all cases by members who may become possessed of it as it enables the society to take effective action when opportunity arrives.

The meeting was concluded after Dr. HERON and Mr. ANDREW CLARK, chairman of the Council of the British Medical Association, had addressed those present explaining that the proposed scheme for medical defence by the British Medical Association had not yet been accepted by the Council of the Association. The Council had merely sent the scheme to the divisions of the Association asking for opinions upon it. Until replies had been received from the divisions it could not be said that the Council of the Association had finally dealt with the matter.

THE DISEASE PROBLEM IN THE WEST INDIES.

AT the West India Committee Rooms, Seething-lane, London, E.C., on March 8th, Sir PATRICK MANSON delivered an address on the Disease Problem in the West Indies. The Duke of Marlborough presided and there was a large attendance. Sir Patrick Manson, after a few prefatory remarks, said:

In what follows I propose, in the first place, to specify some of the more important diseases of the West Indies, making a few remarks on each and concluding with a few suggestions on what I conceive to be the best practicable means by which they can be combated. In the West Indies the various forms of tuberculosis are prevalent and in some places the disease is far more common than in England; in Demerara, for example, it is one of several diseases which but for the constant flow of immigration from Barbados, from India, and elsewhere would in no long time exterminate the population. As tuberculosis is not a tropical disease in the strict sense of that expression I only mention it in order that you may carry away a properly proportioned impression of the causes of disease and death in the tropics, that you may avoid the misconception that death in the tropics is necessarily the outcome of disease special to the tropics.

Malaria is prevalent in most of the West Indies but does not as a rule approach in malignity that of tropical Africa. In the more highly malarious districts, such as the neighbourhood of Georgetown, Demerara—as Dr. C. W. Daniels was the first to point out—after the first year of life practically every black child is affected with malaria. By repeated re-infection with the germ the child in time acquires an increasing immunity, so that by the time the black child has grown to be a man he is no longer, or only feebly, susceptible. This is how the negro of certain localities has earned the reputation of being malaria-proof. It is an acquired immunity, not racial or inherited. The immunising process is a long one and many perish before it is complete. The white child supports this process much less successfully than does the black child, for few survive it, and this is one reason for the difficulty of raising European children in highly malarial districts. In the negro races malaria is a chief factor of the excessive infantile mortality. The public statistics do not bring out sufficiently this important fact. In these statistics deaths which are really attributable to malaria are often, I might say generally in the case of young children, returned as convulsions, meningitis, sunstroke, pneumonia, and so forth. Thus we are apt to receive a false impression of the gravity of this disease. An average attack of malaria is not a serious matter as regards risk to life, but in consequence of its wide prevalence and frequency malaria is one of those diseases like measles or whooping cough, which though rarely fatal are the cause of an enormous aggregate mortality, far in excess of that of many diseases which, case for case, are very much more deadly. Malaria is the principal enemy of the white man in the tropics. Where malaria is altogether absent, as in Barbados, or mild, as in the Caymans and the highlands of Jamaica, the white man thrives and may reproduce his race unimpaired in vigour for generations. Where malaria is common and severe the white race degenerates and quickly dies out. It is not the climate that makes the tropics inimical to the European constitution, it is the diseases—that is to say, the parasites—of the tropics, and especially malaria, that practically have precluded the white man from successful colonisation of this, the finest and most productive zone

of the globe. Dysentery and allied conditions, ankylostomiasis, and filariasis, are also common in the West Indies. In some parts of the West Indies, Barbados for example, one-third of the population is the subject of filariasis For the most part it does little harm but a proportion of those affected are liable to a variety of accidents in the shape of abscesses, of elephantoid fever, of chyluria, and of that hideous deformity known as elephantiasis or sometimes as Barbados leg. Yellow fever is a disease peculiarly West Indian, being, in fact, almost confined to the West Indies and neighbouring mainland. For some reason not yet satisfactorily explained it is comparatively rare in the native-born West Indian and when it does attack him it is usually of little gravity, but the case is quite otherwise with the European immigrant. Yellow fever has done a great amount of harm to the West Indies, not only directly by causing an enormous loss of life but also indirectly by the dislocation and hampering of trade. Yellow fever used to mean quarantine all round and quarantine kills trade. In addition to the diseases I have alluded to there are many others of a tropical nature such as yaws, dengue, leprosy, and so forth, and over and above these tropical diseases there is a vast assortment of sicknesses which the West Indies have in common with the rest of the world. Practically all the diseases of temperate climates, with perhaps the exception of scarlet fever, are to be found there with some two or three dozen tropical diseases thrown in.

[Sir Patrick Manson here referred at some length to the influence of specific micro-organisms in the causation of tuberculosis and malaria. He continued as follows:—]

We are not so sure about the germ cause or causes of the dysenteries and diarrhœas but we know that these diseases are specially favoured by unwholesome feeding. The influence of feeding in inducing these intestinal diseases is well illustrated by what happens in most negro nurseries. Writing in the sixth issue of the *British Guiana Medical Annual* Dr. N. Barnes remarks: "As regards feeding, the children of our populace must be ranged in two classes. The Hindu coolies almost invariably nurse their children. With the negroes it is far different. Almost from the moment of birth the black baby is crammed with pap made of plantain, Indian corn-meal, cassava starch, &c., sometimes even with soup made of salt meat or fish. When this diet causes dyspepsia and the child, being in pain, begins to cry, the usual treatment is to fill it up with more pap until it is unable to cry." In such circumstances dysentery or diarrhœa or convulsions are only to be expected. This grotesque system of infant feeding has much to do with the enormous infantile mortality so notorious among the negro races. As regards ankylostomiasis we know that the parasite (ankylostomum duodenale) gains access to the human body through the medium of dirty water, dirty food, dirty dishes, or dirty unwashed hands. In certain circumstances it is believed by some to penetrate the skin of the feet and legs of persons who wade through fouled ground. Having entered the body in this way it bores through the tissues or is carried by the blood stream to its final habitat—the bowel. The eggs of the mature worm escaping in the discharges from the bowel are spread about the fields and in the neighbourhood of houses where they hatch in the warm damp soil and from time to time make some unfortunate individual their host, so that a sick man is a danger to his neighbour, although the disease he carries about with him cannot be said to be infectious in the usual sense of the word. Similarly the victim of filariasis is a danger to his neighbours. The full-grown, long, and slender filaria lives in the tissues of the body, but its young circulate with the blood. Particular species of mosquitoes suck this filariated blood. The young filariæ so imbibed pass into the muscles of the mosquito, and after undergoing a developmental process there, wander to the mouth parts of the insect, and when the mosquito proceeds to feed on another man the worm slips along the proboscis and so into the human host, where it grows and in time produces young of its own. Prevent mosquitoes biting filariated men, or if they chance to bite filariated men prevent them from biting healthy men, and you will prevent the spread of filariasis and its associated diseases.

Lastly, as regards yellow fever, although we do not know the germ of the disease we know how the disease is acquired. The germ is so minute that it passes through the closest porcelain filter and seems to be ultra-microscopic, but we know that it exists, and that like the germ of malaria it is transferred from one victim to another by a certain kind of mosquito, the common West Indian tiger mosquito (stegomyia fasciata). This knowledge, though only some two years old, has already done, and is destined in the future to do, more for the West Indies and the neighbouring mainland than money subsidies, banana culture, trade preferences, and all similar methods of stimulating prosperity lumped together. The world should be ever grateful to the American authors of this, the latest and perhaps the greatest triumph of sanitary science. If the mosquito in question does not bite a yellow fever patient during the first three or four days of his illness it will not become infected or if healthy men are protected from the bites of the infected mosquito they will not contract the disease, even though they live in the same room as the patient, or wear the same clothes, or even sleep in the same bed. Acting on this knowledge the American sanitarians have rid Havana of yellow fever. For the first time in nearly 200 years there is now no yellow fever in that city, once the hotbed of this disease, a hotbed from which many devastating epidemics have spread all over the West Indies and to many parts of the United States, Mexico, and Central and South America. From what I have said you will perceive the importance of the rôle played by the mosquito in the diffusion of tropical disease. But for mosquitoes the tropics would be as healthy as, if not healthier than, England.

This brings me to the more practical part of my paper. Although we know something about these germs and the way in which they are spread, little use has hitherto been made of this knowledge, but if it were properly applied we could control, if not abolish, many of the diseases which these germs give rise to. Tuberculosis would be checked could we induce the negroes to improve their houses and to keep their doors and windows open; malaria, filariasis, and yellow fever would be checked could we suppress mosquito puddles and induce people to use mosquito nets; dysentery and ankylostomiasis would be checked could we institute a proper conservancy and supply pure drinking water; the excessive infant mortality would be checked could the negro mothers be taught how to feed their babies. All this is within the power of an intelligent sanitation and, moreover, I hold it to be perfectly practicable if public opinion be educated. I have two suggestions to make. The first is that a modest but well-equipped laboratory, with an able and experienced director, be established at some central and otherwise suitable point in the West Indies, the laboratory to be devoted to the study of the causes and prevention of the diseases of man and the domestic animals in the West Indies. The other suggestion I would make is that every boy and girl in every school in our West Indian colonies be taught the leading facts on which a rational system of tropical sanitation might be founded. The idea is a perfectly praticable one and to carry it out would cost next to nothing. The educational machinery in the shape of teachers and schools already exists. All that is required would be a short course of instruction to the teachers, a few diagrams, and two or three additional pages in the current school books. It ought not to be difficult to put into simple language the story of malaria, of filariasis, of yellow fever and their relations to the mosquito; the story of the ankylostoma, of the tubercle bacillus, and of other important disease germs. If well done by a skilled writer it would sink into the minds of the children to be a guide to them in their future lives. It is only when the negro is young that you will ever get him to believe in, and to act on, the great facts to which I have alluded. If these facts and ideas are instilled into the mind of the young negro he will stick to the truth as obstinately as he now sticks to nonsense but in adult negroes such teaching would make no impression.

THE PREVENTION OF FIRE AT ETON.—An inquiry will be held at Eton on March 23rd with reference to an application which has been made by the Eton urban district council to the Local Government Board for sanction to borrow £5200 to build a fire station and depôt in High-street, Eton.

THE board of the British Vacuum Cleaner Company, Limited, having offered to H.M. the King a vacuum cleaner equipment for the new Consumptive Sanatorium at Midhurst, Surrey, has received from Lord Knollys a gracious acceptance of the offer.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Metropolitan Borough of Finsbury.—Dr. George Newman is to be congratulated upon the early appearance of an interesting annual report for 1903 and it would add materially to the value of all annual reports if they could be issued with something approaching the same celerity and, at the same time, thoroughness. In the statistical portion of the report a table is furnished as to deaths in relation to tenements and as it is of very considerable and general interest from a public health standpoint we reproduce it here :—

Finsbury, 1903. Death-rates per 1000 from all and Certain Causes in Houses or Tenements of Several Sizes.

Size of tenement.	Census population (1901).	All causes.	Zymotics.	Phthisis.	Respiratory diseases (excluding phthisis).
One-roomed tenement	14,516	38·9	5·6	4·5	9·3
Two ,, ,, ...	31,482	22·6	3·8	2·8	5·3
Three ,, ,, ...	21,280	11·7	1·8	1·2	2·4
Four ,, ,, (and upwards of four rooms)	33,185	5·6	0·54	0·63	0·84

The poorest and unfittest classes will naturally be found in the one-roomed tenements but nevertheless this table shows what an enormous factor conditions of living form in determining the death-rate and how much of such death-rate is really preventable in a social sense. We are fully aware that the usual criticisms as to age, sex, and occupation may be levelled against this table, but we agree with Dr. Newman that it points to the fact that "the conditions of life obtaining in one-room tenements are such as tend towards poor physique, disease, and death. The density of population is higher, the physical restrictions are greater, and there is less fresh air and more uncleanliness." The figures in our view tend to emphasise the fact that in better conditions of living we have perhaps the most potent instrument of all sanitary measures. Some interesting figures relative to pulmonary tuberculosis are furnished in the report before us. The history of 129 cases of the disease was investigated and in 118 the source of infection is regarded as having been a relative. In many of these cases, Dr. Newman states, the history indicated family infection through several generations, as many as four or five near relatives dying from this disease at intervals of two or three years. We are not told whether in these cases the patients were members of the same house or only of the same family. There are, of course, not a few instances on record where members of a family with a tuberculous proclivity have all died within a few years of one another, although they had not met for many years. But Dr. Newman evidently attaches importance to any opportunity for infection, however long ago it may have occurred. For instance, here is an illustration of this point. "F., 66 years. Phthisis four years. 11 years ago worked in orphanage at Bournemouth where many of the inmates were phthisical." Of course, if exposure 11 years previously is to be held to account for infection in this case it would not be difficult to find an explanation for every case that occurs, and a slight extension of this sort of argument would bring us to the views recently enunciated by Behring that infection is practically always contracted in early childhood, but that the infection remains in most instances latent until some degeneration or alteration of the tissues enables the bacillus to increase and to produce what we recognise as tuberculosis. The section of Dr. Newman's report which deals with Protection of the Food-supply is very instructive and we could wish that every annual report contained a section on the same lines. Finsbury is one of the chief centres in the metropolis for the manufacture of ice-creams and 1065 Italians, many of whom are engaged in this industry, reside in the "Italian quarter" of that borough. Much attention was given during 1903 to the subject of tinned peas, and peas which had been subjected to a "new" process of preservation came in for much discussion in the law courts. Some difficult questions were raised at the trial but the evidence tended to show that although in several cases the tins were not "blown," their contents had not been thoroughly sterilised in the first instance. Probably some sporing organism had escaped destruction. There are in Finsbury 232 restaurants and eating houses and in these 400 men and 600 women, exclusive of waiters and waitresses, are engaged in the preparation of food and some 60,000 persons resort thither daily for refreshment. Of these places not less than 68 per cent. were found defective in one or other sense during 1902—a fact which shows how important is their thorough supervision. A most instructive section on the milk-supply of the borough is furnished by Dr. Newman and all interested in the question will do well to read it. When we are told that some 1200 farms situated in different parts of the country send their milk into Finsbury it is not difficult to realise what are the risks attending the consumption of raw milk. The greater portion of the Finsbury milk is derived not from the home counties but from the great milk-producing counties of Derbyshire, Staffordshire, Leicestershire, Warwickshire, and Wiltshire—i.e., 95 per cent. of the milk coming into the district is a very considerable time in the train, the average journey from farm to milkshop being from ten to 12 hours. In many cases, indeed, the milk does not actually reach the consumer until it is 24 hours old. Dr. Newman deals with the history of the milk from the cow to the consumer and he shows in what manner it is liable to contamination at the farm, in transit, in the milkshop, and at the home of the consumer. As regards the shop attention is drawn to the risks which are run from the storage of milk in uncovered vessels in places where spices, paraffin oil, blacking, potatoes, and a host of other articles are exposed for sale. Dr. Newman regards the contamination by the repeated dipping into the milk of small receptacles as more or less inevitable, but, of course, a small churn with a tap would entirely do away with this risk. The bacteriology of milk is as yet in its infancy, but Dr. Newman, as the result of the examination of several samples collected in different parts of London and examined at once, found that the average number of bacteria per cubic centimetre ranged from 4,800,000 to 340,000, this latter number being probably due to the plentiful use of preservatives; the number of liquefying colonies per cubic centimetre ranged from 120,000 to *nil*, the putrefactive organisms including the bacillus coli communis and streptococci. The appendix to the report contains some interesting observations upon aliens in Finsbury in 1903 and Dr. Newman quotes from the recent report of the Royal Commission to show how erroneous the popular notions are as to the "dumping" of aliens on our shores. The table furnished by the Commission shows that the percentage of aliens to total population is lower in the United Kingdom than in any other country of Europe with the exception of Sweden and Spain, while in no country in Europe does the proportion approach that in the United States where the percentage of aliens to total population is no less than 13·71, as against 9·58 in Switzerland, 1·38 in Germany, and only 0·69 in the United Kingdom—i.e., the number of aliens in this country is considerably under 300,000.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8908 births and 5577 deaths were registered during the week ending March 12th. The annual rate of mortality in these towns, which had been 18·5, 17·5, and 18·6 per 1000 in the three preceding weeks, further rose last week to 19·0 per 1000. In London the death-rate was 20·1 per 1000, while it averaged 18·6 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·9 in Tottenham, 9·6 in Hornsey, 10·3 in Walthamstow, 11·7 in Newport (Mon.), 11·8 in Leyton and in Tynemouth, 12·0 in Smethwick, and 12·3 in Reading; while the highest rates were 23·0 in Manchester, 23·2 in Birkenhead, 23·4 in Swansea, 23·5 in Brighton, 23·9 in Norwich, 24·6 in West Hartlepool, 24·9 in Wigan, and 25·8 in Preston. The 5577 deaths in these towns last week included 500

which were referred to the principal infectious diseases, against 493, 420 and 503 in the three preceding weeks; of these 500 deaths 169 resulted from whooping-cough, 148 from measles, 65 from diphtheria, 54 from diarrhœa, 31 from scarlet fever, 27 from "fever" (principally enteric), and six from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Southampton, Reading, Great Yarmouth, Burton-on-Trent, Smethwick, Barrow-in-Furness, or Newport (Mon.); among the other towns the highest death-rates from the principal infectious diseases were recorded in Norwich, St. Helens, Warrington, Bolton, West Hartlepool, Gateshead, Rhondda, and Swansea. The greatest proportional mortality from measles occurred in Norwich, Birmingham, Aston Manor, Stockport, St. Helens, Oldham, Rochdale, and Rotherham; from scarlet fever in Warrington; from diphtheria in Portsmouth, Walsall, and Sunderland; from whooping-cough in Wolverhampton, Handsworth (Staffs.), Birkenhead, Liverpool, Bootle, St. Helens, Warrington, Bolton, Bury, West Hartlepool, Gateshead, and Swansea; from "fever" in Nottingham; and from diarrhœa in Middlesbrough. Three fatal case of small-pox were registered last week in Nottingham, one in London, one in Warrington, and one in Gateshead, but none in any other of the 76 large towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 29, 31, and 41 on the three preceding Saturdays, had further risen to 54 on Saturday last, March 12th; 21 new cases were admitted during last week, against nine, five, and 13 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1601, against 1620, 1587, and 1578 at the end of the three preceding weeks; 192 new cases were admitted during the week, against 143, 150, and 153 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 349, 322, and 371 in the three preceding weeks, further rose last week to 414, and were 156 in excess of the number in the corresponding period of last year. The causes of 67, or 1·2 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bolton, Leeds, Newcastle-on-Tyne, Cardiff, and in 39 other smaller towns; while the highest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, Warrington, Rochdale, Blackburn, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 22·2, 21·8, and 21·2 per 1000 in the three preceding weeks, increased again to 21·5 per 1000 during the week ending March 12th, and was 2·5 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·2 in Greenock and 15 4 in Perth to 23·5 in Glasgow and 31·6 in Paisley. The 710 deaths in these towns included 21 which were referred to whooping-cough, 20 to measles, 13 to diarrhœa, five to small-pox, four to scarlet fever, four to diphtheria, and one to "fever." In all, 68 deaths resulted from these principal infectious diseases last week, against 75, 79, and 89 in the three preceding weeks. These 68 deaths were equal to an annual rate of 2·1 per 1000, which was 0·4 per 1000 in excess of the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 26, 21, and 36 in the three preceding weeks, declined again last week to 21, of which eight occurred in Aberdeen, three in Glasgow, three in Dundee, three in Paisley, and three in Leith. The deaths from measles, which had been 19, 27, and 22 in the three preceding weeks, further declined to 20 last week, and included ten in Glasgow, six in Paisley, and four in Dundee. The fatal cases of diarrhœa, which had been 18, 11, and 19, in the three preceding weeks, decreased again last week to 13, of which five were registered in Glasgow, three in Dundee, two in Edinburgh, and two in Aberdeen. The deaths from small-pox, which had been five, six, and three in the three preceding weeks, rose again to five last week, and included three in Greenock and two in Glasgow. The fatal cases of scarlet fever, which had been three and two in the two preceding weeks, increased again last week to four, of which two occurred in Paisley. The deaths from diphtheria, which had been five in each of the two preceding weeks, declined to four last week, and included three in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 167, 165, and 155 in the three preceding weeks, increased to 156 last week, and were 39 in excess of the number in the corresponding period of last year. The causes of 33, or nearly 5 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7, 27·2, and 26·4 per 1000 in the three preceding weeks, rose again to 28·3 per 1000 during the week ending March 12th. During the past four weeks the death-rate has averaged 27·9 per 1000, the rates during the same period being 18·1 in London and 18·7 in Edinburgh. The 206 deaths of persons belonging to Dublin registered during the week under notice were 14 in excess of the number in the preceding week and included 11 which were referred to the principal infectious diseases, against 16, 15, and 13 in the three preceding weeks; of these, six resulted from whooping-cough, three from "fever," one from scarlet fever, and one from diarrhœa, but not any from small-pox, measles, or diphtheria. These 11 deaths were equal to an annual rate of 1·5 per 1000, the death-rates last week from the principal infectious diseases being 1·7 in London and 0·5 in Edinburgh. The fatal cases of whooping-cough, which had been nine, 11, and ten in the three preceding weeks, further declined last week to six. The deaths from "fever" which had been two in each of the two preceding weeks, rose to three last week. The 206 deaths in Dublin last week included 39 of children under one year of age and 63 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were considerably in excess of the respective numbers in the preceding week. Five inquest cases and three deaths from violence were registered, and 68, or nearly one-third, of the deaths occurred in public institutions. The causes of seven, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1904.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·8 per 1000 of the population, estimated to be 4,649,088 persons in the middle of the year. In the three preceding months the rates had been 6·0, 5·4, and 5·1 per 1000. The rates were considerably below the average in Hampstead, Holborn, the City of London, Lewisham, and Woolwich; while they showed the largest excess in Bethnal Green, Stepney, Poplar, Battersea, and Deptford. The prevalence of small-pox last month showed a slight increase over that recorded in the two preceding months; of the 19 cases notified during the month, four belonged to Battersea, three to Bermondsey, and two each to Islington, Hackney, Bethnal Green, and Southwark. The Metropolitan Asylums hospitals contained 31 small-pox patients at the end of last month, against 40, 26, and 21 at the end of the three preceding months; the weekly admissions averaged six, against eight, four, and four in the three preceding months. Scarlet fever was slightly less prevalent than it had been during the preceding month; the greatest proportional prevalence of this disease was recorded in Paddington, Chelsea, Bethnal Green, Stepney, Poplar, Bermondsey, and Deptford. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals, which had been 1738, 1606, and 1626 at the end of the three preceding months, had declined again to 1560 at the end of last month; the weekly admissions averaged 153, against 184, 168, and 182 in the three preceding months. The prevalence of diphtheria corresponded almost exactly with that recorded in each of the three preceding months; among the various metropolitan boroughs this disease was proportionally most prevalent in Hackney, Bethnal Green, Stepney, Poplar, Battersea, and Deptford. The Metropolitan Asylums hospitals contained 782 diphtheria patients at the end of

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1904.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1904.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,649,688	19	696	534	—	111	—	21	338	—	1718	4·8	2	142	21	59	190	—	19	—	73	506	1·4	5039	16·7	124
West Districts.																										
Paddington	146,975	—	32	7	—	3	—	1	11	—	54	4·8	—	13	2	1	1	—	—	—	—	17	1·5	181	16·1	139
Kensington	179,236	—	18	14	—	1	—	1	8	—	42	3·9	—	12	—	1	1	—	—	—	2	16	1·2	192	14·0	100
Hammersmith	117,412	—	7	10	—	5	—	2	12	—	36	4·0	—	11	—	1	—	—	—	—	1	13	1·4	140	15·5	83
Fulham	152,482	—	24	19	—	2	—	—	6	—	51	4·4	—	8	—	5	1	—	1	—	2	17	1·5	197	16·8	126
Chelsea	74,329	—	15	5	—	2	—	1	4	—	27	4·7	—	7	2	—	3	—	—	—	2	14	2·5	117	20·5	119
City of Westminster	177,321	—	18	17	—	5	—	2	12	—	54	4·0	—	3	—	—	1	—	2	—	7	13	1·0	212	15·6	118
North Districts.																										
St. Marylebone	130,337	—	18	7	—	—	—	1	13	—	39	3·9	—	4	—	2	2	—	1	—	6	15	1·5	177	17·7	78
Hampstead	86,663	—	9	7	—	—	—	—	3	—	19	2·9	—	2	—	1	2	—	—	—	1	6	0·9	86	12·9	244
St. Pancras	235,936	—	34	28	—	9	—	1	16	—	88	4·9	—	11	3	4	3	—	2	—	1	24	1·3	290	16·0	133
Islington	341,044	2	48	28	—	4	—	4	13	—	99	3·8	1	1	1	5	15	—	1	—	3	27	1·0	429	16·4	105
Stoke Newington	52,445	—	7	6	—	—	—	—	3	—	16	4·0	—	—	—	2	—	—	—	—	—	2	0·5	54	13·4	70
Hackney	226,266	2	33	37	—	6	—	2	22	—	102	5·9	—	—	2	6	5	—	1	—	—	14	0·8	271	15·6	112
Central Districts.																										
Holborn	57,161	—	4	5	—	4	—	—	3	—	16	3·6	—	3	—	—	1	—	—	—	—	4	0·9	64	14·6	88
Finsbury	98,958	—	18	5	—	3	—	—	7	—	33	4·3	—	2	1	—	2	—	—	—	1	6	0·8	135	17·8	89
City of London	23,482	—	2	1	—	2	—	—	1	—	6	3·3	—	—	—	—	—	—	—	—	—	—	—	26	14·4	87
East Districts.																										
Shoreditch	117,033	1	13	12	—	3	—	—	12	—	41	4·6	—	1	—	1	8	—	—	—	2	12	1·3	178	19·8	129
Bethnal Green	130,207	2	34	46	—	1	—	—	9	—	92	9·2	—	1	—	3	6	—	—	—	4	14	1·4	194	19·4	134
Stepney	303,791	1	65	47	—	12	—	1	26	—	152	6·5	—	7	2	5	15	—	2	—	3	34	1·5	445	19·1	135
Poplar	169,905	1	34	30	—	4	—	1	20	—	90	6·9	—	5	—	5	13	—	—	—	1	24	1·8	247	19·0	143
South Districts.																										
Southwark	207,937	2	17	19	—	10	—	1	18	—	67	4·2	1	7	1	1	18	—	2	—	6	36	2·3	323	20·2	160
Bermondsey	129,397	3	27	12	—	3	—	—	14	—	59	5·9	—	6	—	1	11	—	—	—	3	21	2·1	207	20·9	144
Lambeth	310,359	—	32	32	—	7	—	1	18	—	90	3·8	—	14	3	4	1	—	2	—	7	31	1·3	396	16·6	100
Battersea	175,465	4	26	35	—	12	—	—	12	—	89	6·6	—	5	—	2	12	—	2	—	8	29	2·2	211	15·7	149
Wandsworth	257,586	1	46	32	—	5	—	—	21	—	105	5·3	—	3	2	2	6	—	1	—	1	15	0·8	304	15·4	113
Camberwell	268,384	—	35	21	—	1	—	—	25	—	82	4·0	—	10	—	—	16	—	1	—	4	31	1·5	315	15·3	130
Deptford	113,509	—	28	26	—	1	—	1	12	—	68	7·8	—	3	1	5	10	—	—	—	1	20	2·3	159	18·3	117
Greenwich	101,651	—	12	12	—	1	—	—	9	—	34	4·4	—	—	1	—	14	—	—	—	1	16	2·1	130	16·7	141
Lewisham	140,401	—	20	6	—	2	—	1	4	—	33	3·1	—	1	—	—	10	—	—	—	2	13	1·2	124	11·5	139
Woolwich	123,416	—	19	8	—	3	—	—	4	—	34	3·6	—	2	—	2	13	—	1	—	4	22	2·3	155	16·4	147
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

last month, against 763, 734, and 752 at the end of the three preceding months; the weekly admissions averaged 107, against 109, 104, and 97 in the three preceding months. Enteric fever was rather less prevalent during February than in the preceding month; the greatest proportional prevalence of this disease was recorded in Hammersmith, Holborn, the City of London, Stepney, Southwark, and Battersea. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 286, 246, and 166 at the end of the three preceding months, had further declined to 125 at the end of last month; the weekly admissions averaged 15, against 45, 30, and 16 in the three preceding months. Erysipelas was proportionally most prevalent in Hammersmith, St. Marylebone, Shoreditch, Poplar, Bermondsey, and Deptford. The 21 cases of puerperal fever notified during the month included four in Islington and two each in Hammersmith, City of Westminster, and Hackney.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Feb. 27th the deaths of 5959 persons belonging to London were registered, equal to an annual rate of 16·7 per 1000; in the three preceding months the rates had been 16·2, 17·2, and 18·2 per 1000 respectively. The lowest death-rates in London last month were 11·5 in Lewisham, 12·9 in Hampstead, 13·4 in Stoke Newington, 14·0 in Kensington, 14·4 in the City of London, and 14·6 in Holborn; while the highest rates were 19·1 in Stepney, 19·4 in Bethnal Green, 19·8 in Shoreditch, 20·2 in Southwark, 20·5 in Chelsea, and 20·9 in Bermondsey. The 5959 deaths from all causes included 506 which were referred to the principal infectious diseases; of these, two resulted from small-pox, 142 from measles, 21 from scarlet fever, 59 from diphtheria, 190 from whooping-cough, 19 from enteric fever, and 73 from diarrhœa. In the City of London no death from any of these infectious diseases was recorded last month; among the various metropolitan boroughs they caused the lowest death-rates in Hampstead, Stoke Newington, Hackney, Holborn, Finsbury, and Wandsworth, and the highest rates in Chelsea, Southwark, Bermondsey, Battersea, Deptford, Greenwich, and Woolwich. Of the two fatal cases of small-pox registered last month one belonged to Islington and one to Southwark. The 142 fatal cases of measles were 39 below the corrected average number; among the various metropolitan boroughs measles was proportionally most fatal in Paddington, Kensington, Hammersmith, Fulham, Chelsea, and Holborn. The deaths from scarlet fever last month numbered 21, against an average of 49 in the corresponding periods of the ten preceding years; of these 21 deaths, three belonged to St. Pancras, three to Lambeth, and two each to Paddington, Chelsea, Hackney, Stepney, and Wandsworth. The 59 fatal cases of diphtheria showed a decline of 102 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Stoke Newington, Hackney Bethnal Green, Poplar, and Deptford. The 190 deaths from whooping-cough were 24 below the average number in the corresponding periods of the ten preceding years; the greatest proportional mortality from this disease occurred in Poplar, Southwark, Bermondsey, Deptford, Greenwich, Lewisham, and Woolwich. The 19 fatal cases of enteric fever showed a decline of 27 from the corrected average number; of these 19 deaths two each were recorded in the City of Westminster, St. Pancras, Stepney, Southwark, Lambeth, and Battersea. The 73 deaths from diarrhœa were 20 in excess of the average number in the corresponding periods of the ten preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in the City of Westminster, St. Marylebone, Bethnal Green, Southwark, Battersea, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was nearly 30 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 124 per 1000. The lowest rates of infant mortality were recorded in Hammersmith, St. Marylebone, Stoke Newington, Holborn, Finsbury, and the City of London; and the highest rates in Hampstead, Poplar, Southwark, Bermondsey, Battersea, Greenwich, and Woolwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon Leonard Henry Kellett has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Dec. 5th, 1903).

The following appointments are notified: — Deputy Inspectors-General of Hospitals and Fleets: M. FitzGerald, C.M.G., to Jamaica Hospital and C. Pearson to Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

Major R. E. Kelly, from half-pay, retires on retired pay (dated March 12th, 1904). Major J. Girvin has joined the Home District for duty. Lieutenant-Colonel T. P. Woodhouse has been appointed to the charge of the Station Hospital, Umballa.

ROYAL ARMY MEDICAL CORPS (MILITIA).

Lieutenant M. A. Cholmeley resigns his commission (dated March 12th, 1904).

VOLUNTEER CORPS.

Rifle: The Queen's Rifle Volunteer Brigade the Royal Scots (Lothian Regiment): Surgeon-Lieutenant J. Scott to be Surgeon-Captain (dated March 12th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Maidstone Companies: Surgeon-Lieutenant Colonel J. Cantlie, 7th Middlesex Volunteer Rifle Corps, to be Honorary Lieutenant-Colonel Commandant (dated March 5th, 1904).

ANTICIPATORY ANTISEPSIS.

A war correspondent of the *Daily Mail*, referring to an interview which he had had with Dr. Wada of the hospital at Chemulpho, where there are 24 of the men who were wounded on the *Variag*, makes the following remark. Speaking of the effects of the new Japanese high explosive shells he says that Dr. Wada recommends washing the bodies of the men and disinfecting their clothing before battle to prevent the pieces of cloth causing the wounds to suppurate.

DEATHS IN THE SERVICES.

Surgeon-Major Robert William Woollcombe, A.M.D. (retired), at his residence, Ellesdee, Westbury-on-Trym, near Bristol, on March 7th, in his eighty fifth year. He entered the army as assistant surgeon in March, 1845, and joined the 68th Regiment of Light Infantry. He retired from the service in February, 1857, with the rank of Surgeon-Major.

Correspondence.

"Audi alteram partem."

RAYS PROCEEDING FROM ACTIVE MUSCLES AND NERVES.

To the Editors of THE LANCET.

SIRS,—With reference to the letter from Mr. A. A. Campbell Swinton in your issue of March 5th we willingly admit that when we commenced to make "n"-ray experiments we were not sufficiently careful to try to eliminate heat effects, but it must be remembered that he and others were at that time publicly stating they could get no results at all and were inclined to believe "n"-ray phenomena were subjective. Since the publication of our paper and the confirmation of some of our observations by THE LANCET Mr. Swinton has fallen back on the heat theory and gives heat as a sufficient explanation of the "foot" experiment mentioned in our letter, and such of Professor Blondlot's results as he has been able to repeat. The matter therefore enters into another phase. "N" rays behave admittedly like heat in many of their manifestations and we have only had time to experiment with various heat screens as a means of sifting out the heat. Although we are reasonably sure heat cannot travel through these screens rapidly enough to produce the phenomena we have seen we do not regard the matter as proved with the same certainty as the objective existence of the rays which is easily settled by putting a calcium sulphide screen in front of a large board and getting some one in front to say when an operator at the back moves his wrist up to the rear of the screen. The proof

of the non-penetration of heat simply needs time and experiments and on this point we would recommend a perusal of Professor Blondlot's letter in the *Electrician* of March 11th.

We admit that the light of a calcium sulphide screen will be increased by a warm boot, whether on the foot or off it, but in direct opposition to Mr. Swinton we contend the increase of the light is *not* stopped by the interposition of a heat screen if made of a material which is opaque to heat and not to "n" rays. Ordinary cardboard absorbs and holds water like a sponge and we believe the dampness of the cardboard was the cause of Mr. Swinton's failure to see there were muscle rays in addition to heat rays proceeding from the foot. We have repeated the experiment with a shallow false-bottomed wooden box between the foot and the luminous screen and find, as in a number of similar trials, that the light *does* increase from the muscle rays. But we will not take up any more of your space with such early experiments in view of the rapid advance made on the continent each week by a number of French physicists and printed in the *Comptes Rendus*.

Since our last letter we have successfully transmitted the rays along a copper wire and perceived the dull appearance of the light when the screen is held over the poles of a permanent magnet, compared with the brighter light when in the weak field in the neighbourhood. This does not seem to us a proof that the result is due to the magnetism but it is strong evidence against the heat theory.

For the purposes of medical diagnosis the transmission of the rays by means of a wire is much the most convenient method. One end of the wire, attached to a metal button, can be placed on the muscle, while the screen, fixed at a convenient distance away, can be observed at ease. The transmission along the wire travels slowly but the increase in light is quite evident. The reason of the curious pulsation that takes place we have had no time to investigate nor have we been able to find out precisely why all our experiments are occasionally a failure, although we believe our eyes, and not the rays or screen, are at fault. At any rate, we warn readers against attempting any trials except in the early morning or after sunset unless they prepare their vision by shutting themselves in a dark room for about half an hour previously. The easiest muscle ray effect to observe is the increase of light in the screen when it is held in the right hand and the left wrist passed slowly under it. This is, in our opinion, a magnified effect due to eye or brain augmenting a real increase. Unless this can be seen it is useless for the would-be observer to make any further trials with his own eyes. He must work by deputy.

In conclusion, we may point out that the experiments of M. Gilbert Ballet described in the annotation in your last issue (p. 740) seem to us the beginning of new methods of medical diagnosis certain to be developed much further and of which we can only dimly see the importance at present.

We are, Sirs, yours faithfully,

HUGH WALSHAM, M.A., M.D. Cantab., F.R.C.P. Lond.
LESLIE MILLER, A.M.I.E.E.

March 15th, 1904.

ASTIGMATISM AND "EYESTRAIN."

To the Editors of THE LANCET.

SIRS,—The letter of Dr. G. M. Gould, of Philadelphia, in THE LANCET of March 12th, p. 755, commenting upon your recent article on his views concerning "eyestrain," is one which I think should not be suffered to pass without notice from English ophthalmologists. As one of the seniors among them, I venture to offer a few observations upon the subject.

It was my privilege to be well acquainted with Professor Donders; and, shortly after the publication of his *Astigmatismus und Cylindrische Gläser*, I furnished a London monthly medical journal, then edited by the late Dr. Alfred Meadows, with what, except for the scarcely known papers of Young and Airy, was, I believe, the first general description of astigmatism which appeared in English. My attention was, therefore, early directed to the subject; and about 12 years ago, in a statistical summary of the cases of 10,000 consecutive private patients, which you were good enough to publish, I mentioned that 1400 of them, or 14 per cent. of the whole, had presented degrees of astigmatism for the relief of which cylindrical glasses were required. I therefore venture to think that I have some practical knowledge of the condition.

My experience has led me to form the following opinions: (*a*) that a small degree of astigmatism discoverable by minute examination is rather the rule than the exception in the human eye; (*b*) that in the great majority of persons an astigmatism not exceeding half a dioptre is easily corrected by the accommodation, and produces no symptoms of any kind; (*c*) that astigmatism of the cornea is often either increased or corrected by similar or opposite astigmatism of the lens, and that astigmatism of the eye as a whole may therefore either appear or disappear at the period of presbyopia, as a consequence of failing accommodation or of lenticular changes; and, (*d*) that the "eyestrain" alleged to exist in America as a consequence of low degrees of astigmatism has no parallel in the experience of English practitioners.

The 14 cases referred to by Dr. Gould do not impress me. They rather remind me of an anecdote concerning a polite and cautious lawyer, placed at the same dinner-table with a fire-eating colonel who was relating his wonderful adventures by flood and field. At the conclusion of one of these, the lawyer said, "That was, indeed, a most extraordinary incident. I suppose, colonel, that if you had not seen it yourself you would not have believed it?" "I certainly should not," replied the colonel. "Ah," rejoined the lawyer, "I take entirely your view of the case. I did not see it, and so, &c." Moreover, I am old enough to remember when the many women who were poetically described as "stranded upon the shores of life" were all said to be suffering, not from astigmatism, but from ulceration of the cervix uteri, and to be curable by the local application of silver nitrate, or, in extreme cases, of *potassa fusa*. In our own day, adenoid growths have been exalted to a high place in the pathology of childhood. Like the poor, these things are always with us.

If I also may mention cases, I will select two which I have studied with some care; one of them my own, the other that of a lady whom I have known all her life. I passed through youth and early manhood with vision well in excess of $\frac{6}{6}$ths, reading and writing much, and without consciousness that I had eyes. At about 40 I recognised the beginning of presbyopia, and commenced the use of glasses for evening reading and for operating. My latent hypermetropia gradually became manifest, and before I was 60 had reached the degree of 2·50 D. At about 70, I found my distant vision to be a trifle less clear than it had been; and it was at once restored to its former condition by adding to my + 2·50 distance glasses horizontal cylinders of + 0·50. With these, in my seventy-sixth year, I still have $\frac{6}{6}$ths. I assume the appearance of the astigmatism to have been due either to lenticular changes or to the loss of the last shred of accommodation; but my point is that I have never in my life, either before the astigmatism was corrected or since, experienced a trace of ocular discomfort or incapacity.

The lady is highly hypermetropic, and suffered much inconvenience during childhood. At eight years old, she could only read in the evening by standing on a chair under a gas-burner, so as to bring her book close to the light. When she was about 20, I gave her spherical glasses of + 4·50 D. and she wore them constantly, for all uses, for 20 years, and was quite comfortable. She was and is a great reader, but, with the help of the glasses, had sufficient accommodation for near work until she was about 40. At that time, a few months ago, she told me that she wanted more power for reading, and on testing her distant vision I found that, like my own, it was improved by a cylinder of + 0·50. I added this both to her distance and to her somewhat stronger reading glasses, and she sees perfectly. Her astigmatism never had any other effect than a slight diminution of her visual acuteness.

We are not without experience in London of the employment of very weak cylinders. They are often recommended and supplied by unqualified persons who advertise themselves as "ophthalmic opticians" or by similar titles, and who find in the alleged need for cylinders a plea for making high charges for the glasses which they sell. Scores of such glasses have been brought to my consulting-room at different times, with complaints of their inefficiency; complaints often due to the inadequacy of the spherical element rather than to the presence of a negligible cylinder. I am unable, nevertheless, to attach any importance to Dr. Gould's suggested experiment of putting cylindrical glasses upon a non-astigmatic person. I think it probable that the accommodation learns to mask or to overcome a congenital defect, although it might easily be embarrassed by a similar defect suddenly and artificially produced in an adult.

One word more. Dr. Gould tells us that "there is no

more clearly demonstrated fallacy, no greater scientific error" than the opinion expressed by Professor Donders that astigmatism of less than a dioptre was seldom disturbing to vision. This opinion was neither a fallacy nor an error, but a simple statement of Professor Donders's personal experience, unquestionably trustworthy as far as it went, although, if Dr. Gould be right, the experience may have been insufficient to afford a basis for a general conclusion. But, assuming it to have been either a fallacy or an error, how could it possibly have been both? A fallacy, except in the speech and writing of the vulgar, is a sophism, an erroneous method of argument; while an error is a mistaken conclusion, to which a fallacy would naturally lead. To accuse Professor Donders of either, more especially of the "fallacy," is, I think, to fail in the respect due to his memory and to his great services to ophthalmology, and to commit at least an error of taste, even if not an error of judgment.

I am, Sirs, your faithfully,

March 14th, 1904. R. BRUDENELL CARTER.

THE MODE OF INFECTION BY NEMATOIDS.

To the Editors of THE LANCET.

SIRS,—I note the amusing suggestion by Dr. G. C. Low that I have failed to discriminate between embryo and adult nematoids but pass on to his statement that I was "peculiarly unfortunate" in referring to Manson's view that young specimens of Filaria nocturna "escaping into the water in which the mosquito died,-it is through the medium of this fluid brought into contact with the tissues of man." This certainly was the commonly received view till about three years ago and at the time of writing I had unfortunately forgotten Dr. Low's interesting confirmation of Bancroft's suggestion that young nematoids might be found in the proboscis and contiguous parts of the head of Culex fatigans and other species of mosquito. This fact is now well known and has been verified by other observers.

The fact, however, by no means settles the question as to the mode in which infection by Filaria nocturna commonly takes place. The mechanical difficulties opposing the suggestion of infection through the proboscis have been dwelt upon by Dr. Kennard and also by Dr. J. E. Dutton. Embryos swallowed by the mosquito seem often to pass from the crop directly into the thorax (James), thus escaping digestion or expulsion with fæces. From the thorax the worms wander in all directions into the head, getting into the labium and contiguous parts. But because in these circumstances partially developed worms happen to be found in the proboscis it seems by no means necessary to adopt the teleological suggestion of Dr. Low, "that the parasites so situated are there normally awaiting an opportunity to enter the human tissues when next the mosquito feeds on man."[1] As Lieutenant Colonel J. Maitland, I.M.S., says, "so far as Mr. Low's observations have gone there is nothing in them to negative the theory that filariasis is a waterborne disease," and he brings forward several well-attested facts favouring this latter supposition and opposed to the notion of direct infection through the proboscis of the mosquito.

Then, again, an important consideration advanced by Manson must not be lost sight of. He says: "My belief is that before embryos can be found in the blood by ordinary microscopic observation large numbers of parent filariæ must be present in the lymphatics. In many cases we know that hundreds of parent filariæ are present." Which mode of infection is most likely to give rise to the large number of parent worms commonly met with? The drinking of contaminated waters and the passage of embryos through the intestinal canal and into the lymphatic system would seem to favour this multiple infection more than direct infection through the proboscis of the mosquito when the embryo would be as likely to pass into the connective tissue of this or that exposed portion of the body as into one of the blood vessels of the part. I am far from denying the possibility that infection may take place in this latter way, but I believe in the more than equal probability that infection is brought about by contaminated water or food, and think it wrong that this possibility should be ignored. It was with a view to favour this consideration that I have dwelt upon my own experience as showing that young nematoids are from the first well equipped for an independent existence, that they undergo nothing worth the name of a metamorphosis and may therefore need no intermediate host.—I am, Sirs, yours faithfully,

H. CHARLTON BASTIAN.

Manchester-square, March 15th, 1904.

[1] Brit. Med. Jour., June 16th, 1900, p. 1456.

CHLORETONE IN SEA-SICKNESS.

To the Editors of THE LANCET.

SIRS,—Permit me to thank the correspondents who have, in answer to my letter of Jan. 23rd, so kindly contributed to your columns their experiences of chloretone in sea-sickness and at the same time, if not encroaching too much on your valuable space, to make a few remarks.

It is very gratifying to learn that we have now such a reliable prophylactic against the so much dreaded sea- and train-sickness, yet it appears capriciously to fail in a few instances. These failures might be prevented were we better acquainted with the *modus operandi* of the remedy. The anæsthetic effect of chloretone on the gastric mucous membrane suggested by Mr. H. Cameron Kidd is an explanation which seems to me hardly sufficient to account for all the facts. The observation by Dr. O. Clayton Jones of its successful use in cases of nervous origin, its hypnotic effect, and the results obtained with it in my own practice seem to prove that it acts also on the nerve centres.

In one case, for example, the pains of spasmodic dysmenorrhœa, headache, and vomiting all subsided in about half an hour after administration of 15 grains of chloretone and in less than an hour tranquil sleep ensued.

The occasional failure of chloretone to prevent sea-sickness may be due in some instances to its interference with the secretion or action of the digestive ferments and, if so, that source of failure might be avoided by taking a full dose of the drug on an empty stomach and refraining from food for an hour or two afterwards. It is to be regretted that Mr. L. E. Ellis did not give information on that point. Hoping that these remarks may be of service to others and that further information on this important subject may be elicited in your columns,—I am, Sirs, yours faithfully,

Seven Kings, Ilford, March 2nd, 1904. JOHN DUNLOP.

PREVENTION OF INFECTIOUS DISEASE IN BATH.

To the Editors of THE LANCET.

SIRS,—Your correspondent Dr. Preston King, in a letter on the above subject in THE LANCET of March 12th, p. 755, raises an important legal point with reference to infectious diseases. The point is as to whether Section 126 of the Public Health Act, 1875, applies to measles and whooping-cough. Dr. King also refers to diseases which are scheduled. I take it that he means by that term the diseases mentioned in Section 6 of the Infectious Disease (Notification) Act, 1889, and any other infectious disease to which the Act has been applied. If that be so, Dr. King says: "It is a fact, not a question of opinion at all, but simply a matter of fact," that Section 126 of the Public Health Act applies to those diseases only mentioned in Section 6 of the Notification Act. That is a very decided position to take up, and as Dr. King is so confident on the matter I shall be glad if he will be good enough to point out through your columns the section and Act upon which he relies. I am not aware of the existence of any section in the Notification or any other Act which limits the operation of Section 126 of the Public Health Act, 1875, to the particular diseases mentioned in the Notification Act.

The Infectious Diseases (Prevention) Act, 1890, only applies to the diseases mentioned in the Notification Act, but that is specially provided for in Section 2 of the former Act. Section 126 reads: "Any person who while suffering from a dangerous infectious disorder, wilfully exposes himself, &c." A disease to come within the four corners of this section must be both dangerous and infectious. Mumps is a very infectious disorder, but not dangerous, hence the above section would not apply to it. The word "dangerous," I take it, means dangerous to life. There is no doubt but that the above section applies to scarlet fever. Are not both measles and whooping-cough as infectious diseases even more dangerous than scarlet fever? The following were the death rates for England and Wales during the past year for each of these diseases: scarlet fever, 0·12; measles,

0·27; and whooping-cough, 0·27 per 1000 respectively. Again, erysipelas is included in the Notification Act. Does Section 126 apply to it and is it a dangerous infectious disorder?—I am, Sirs, yours faithfully,

J. T. NEICH, M.D. Durb.,
Medical Officer of Health of Halifax.

March 13th, 1904.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Royal Infirmary: Opening of a New Operating Theatre; Tribute to the late Dr. Alexander Davidson.

A NEW operating theatre, the gift of an anonymous benefactor, was opened on March 9th by Mr. E. R. Bickersteth, the President of the Royal Infirmary. The gift will complete a scheme for four operating theatres and two lecture theatres, equipped with every necessary appliance and all thoroughly up to date. The new theatre, of which Mr. G. G. Hamilton will be the surgeon-in-charge, is all that is desirable. Every effort has been made to insure the maximum of light—both natural and artificial—pure air, and clean conditions of work. The appliances are all under the ready control of the operator and his assistants; in fact the simplicity of everything is most noticeable. A feature of the sterilising equipment is the absence of expensive apparatus in the basement. The close proximity of the sterilising apparatus to the operating table will be an enormous advantage to the patient, as the dressings will go straight from the steriliser on to the wound, none of the assistants, except the surgeon, touching even a needle. Mr. Hamilton gave an interesting demonstration to the ladies and gentlemen present on the simplicity of the arrangements. He laid stress on the presence of the hot steam pipes which enabled rapidity of boiling and the advantage of everything being so close at hand to the operator.—At the recent meeting of the committee of the Royal Infirmary the following motion was carried unanimously:—

That the committee desires to place on record its sense of the great loss the institution has suffered by the death of Dr. Alexander Davidson, who had been connected with the infirmary for so many years and who took so large an interest in its rebuilding. Dr. Davidson was honorary physician from 1876 to 1897 and he was never lacking in attention to the patients in his wards who during this long period had the benefit of his great skill and knowledge. On his retirement from this position he was appointed an honorary consulting physician and by his death the hospital has lost a devoted friend.

The Liverpool School of Tropical Medicine: A Year's Results.

The fifth annual report of the Liverpool School of Tropical Medicine, presented in the form of a large-sized pamphlet, records the completion of a successful year's work. The results of the teaching and operations are now beginning to appear and testimony is constantly arriving from West Africa and other unhealthy regions in the tropics that health conditions have very much improved where the recommendations of the school have been followed. The director of the school (Major Ronald Ross, late I.M.S.), had received from the general secretary of the Compagnie Universelle du Canal Maritime de Suez, Paris, a letter stating that as a result of numerous works of drainage, filling up of ditches, oiling cisterns and pits, and suppressing marshes and pools of water, &c., at Ismailia, the number of fever cases had very sensibly diminished. Complete disappearance of anopheletes had not yet been realised but insects recently captured were found not to be infected. The mosquitoes called culex had, however, been suppressed almost completely, so that in the hottest period of the year it had been possible to abandon the use of mosquito nets. Information from another source as to the actual number of cases of malaria shows that they had been reduced from 2000 in 1902 to 200 in 1903. The marked success of the experiments carried out at Ismailia had attracted much attention throughout Egypt and it was hoped that it would stimulate to increased energy those towns on the coast of Africa which remained infected by malaria. The annual cost to the Suez Canal Company for maintaining this remarkable sanitary condition was about £700. Similarly spontaneous testimony is also borne to the improvements in the general health at Cape Coast, Iquito, Peru, and other places owing to attention to improved sanitary details. The report further enumerates the various expeditions undertaken by Major Ross and others since the formation of the school and gives much interesting information regarding experimental and research work carried on in the laboratories of the University of Liverpool. The committee, while thanking generous supporters, indicates that it would be more encouraging if the number of subscribers were larger.

The Recent Small-pox Outbreak in Liverpool; History of Development; Preventive Measures and Vaccination.

Dr. E. W. Hope, the medical officer of health, has published an interesting report dealing with the conditions existent during the outbreak of small-pox in the city in the latter part of 1902 and the whole of 1903. The scourge appeared in October, 1902, and continued for 15 months, afflicting in all 2032 people. But for the extraordinary vigilance and activity of Dr. Hope and his staff greater havoc must have been caused by the loathsome malady. The prevalence in 1902 owed its origin to importations on 23 occasions by sea and on 16 occasions by tramps. During September, 1902, 15 cases occurred in the city, eight of which were directly connected with previous cases, three having been discovered at their homes by the corporation inspectors. The source of infection of six (three being found in one house) was uncertain. The remaining case was brought into the port from Bilbao. The extension of the outbreak originated with an unrecognised case in Robsart-street—an unvaccinated infant to whom no medical man had been called until it was dying from the disease after an illness of eight days. The child was actually dead by the time an intimation had been received by the medical officer of health. On visiting the house all the other occupants, six in number, were found to be suffering from the initial stage of small-pox. All were removed to hospital and the house was thoroughly disinfected by the sanitary staff. A house-to-house visitation resulted in 20 more cases being discovered by the officers, most of them being friends of the family. From this time onwards, in spite of the measures taken to check it, the disease continued slowly to gain ground; the number of cases which occurred in the vicinity of Robsart-street during the three months ending January, 1903, was 99, of which 68 were discovered by the staff as a result of house-to-house visitation. Accompanying Dr. Hope's report is a series of interesting maps and charts showing the gradual spread of the disease. From one case in Lansdowne-street the infection was traced to 29 cases. Doubt as to the nature of the illness proved another fruitful source of dissemination. Owing to the fact that a large number of cases, modified by vaccination, were regarded by the medical adviser as chicken-pox it became necessary to schedule chicken-pox as a notifiable disease in order that doubtful cases might be visited by a medical officer experienced in small-pox. The value of this measure was confirmed by the fact that 54 cases of small-pox which were under treatment as chicken-pox were discovered and dealt with. During the time that small-pox was most prevalent as many as 2000 families were visited daily by the inspectors, with the result that 470 cases were discovered that otherwise would have escaped detection. The report deals with the efficacy of vaccination and the dangers of infection carried in public conveyances, &c. The maximum number in hospital at any one time was 335 on March 19th, 1903. The report also deals with the small-pox hospitals and the Vaccination Acts.

March 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Glasgow: Honorary Degrees.

AMONG the names published of those on whom the Senate of the University of Glasgow has resolved to confer the honorary degree of Doctor of Laws (LL.D.) are two of special interest to the medical profession—viz., William Stirling, B.Sc., M.D., Brackenbury professor of physiology and histology, the Owens College, University of Manchester, and Sir William Taylor, K.C.B., M.D., Director-General of the Army Medical Service, War Office, London. The graduation ceremony will take place on Tuesday, April 19th.

The Royal Philosophical Society of Glasgow.

At a meeting of this society held on March 9th Professor Robert Muir of the University of Glasgow delivered the fourth of the centenary series of lectures, the subject of his address being Some Advances in Medical Science

during the Nineteenth Century. The lecturer dealt chiefly with the development of the science of bacteriology and its influence on medical and surgical practice. He passed in review the work of Virchow, Pasteur, Lister, and Koch and then dealt with some of the important events of recent years—for example, the discovery of the bacillus of plague and Ross's establishment of the mosquito cycle of the malarial parasite and the success of the American Army Commission in stamping out yellow fever. He then referred to the subject of bacterial toxins and antitoxins and the application of the latter in the treatment of disease, particularly diphtheria; also to the methods of protective inoculation introduced by Pasteur for fowl cholera, anthrax, and rabies, and their further elaboration and application in the treatment of cholera, plague, and typhoid fever; and lastly, to recent researches which had shown the existence of a class of micro-organisms invisible as yet to the microscope—a subject of immense interest in connexion with those infectious diseases the etiology of which is still unsolved.

Small pox in Glasgow.

The medical officer of health (Dr. A. K. Chalmers) in his last report shows that 26 patients were admitted to hospital during the week ending Thursday, March 10th, being seven more than were admitted during the previous week. The numbers are, however, diminishing, as is shown by comparing the number under hospital treatment for each of the last three weeks—viz., 157, 121, and 113.

Western Infirmary, Glasgow.

The Partick dean of guild court on March 10th passed plans for the erection of an additional wing to the Western Infirmary which it is estimated will cost £20,000. This new wing will form the first part of a new block which the governors propose to erect and which altogether will cost £100,000. This is in addition to the new dispensary which is now approaching completion. The building, the plans of which have just been passed, will give ward accommodation for 59 beds, while the other two wings required to complete the whole new block will give further accommodation for 88 beds and will include two large operating theatres and a fully equipped gynæcological department.

Reconstruction of the Royal Infirmary, Glasgow.

The first list of subscriptions to the supplementary fund opened on Jan. 29th towards the reconstruction of the Royal Infirmary has just been published and amounts in all to £97,655. About two thirds of the estimated cost of the new scheme have already been subscribed but this leaves fully £100,000 still to be obtained.

Memorial to the late Professor Nicol, Aberdeen.

Dr. W. Mackie, 13, North-street, Elgin, who has been appointed secretary and treasurer of a movement for the purpose of getting up a memorial to the late Professor Nicol of the University of Aberdeen, has been doing his best to promote the scheme and a committee has been formed for the purpose of collecting subscriptions and of advising as to a suitable form for the memorial, a suggestion being that it should be a memorial brass similar to those erected to the memory of his predecessor and his successor, the late Professor Macgillivray and the late Professor Nicholson. It is felt that a suitable memorial should be erected to the memory of the distinguished stratigraphist who did valuable work during his 25 years' tenure of office in the University of Aberdeen. The members of the arts class of 1874 to 1878 are taking a keen interest in the movement.

Montrose Asylum and Infirmary.

The managers of the Montrose Asylum and Infirmary met on March 1st, Mr. J. M. Ross presiding. It was intimated that Dr. George A. Johnston, junior assistant at Sunnyside Asylum, had been appointed to fill the vacancy caused by the resignation of Dr. A. H. Cassells, at a salary of £200. The asylum statistics for February were submitted by Dr. J. G. Havelock. They showed that six patients were admitted to the institution during the month, four were discharged, one was transferred, and one had died, leaving 682 on the register at that date, of which six were voluntary patients. Of the 682 patients, 254 were from the county and 76 were from Dundee. The clerk read the infirmary statistics for February. 18 patients were admitted, 14 were discharged cured, one was improved, one was not improved, and three had died, leaving 18 patients in the house at that date.

March 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Belfast District Lunatic Asylum.

AT the usual monthly meeting on March 14th it was reported that there were 1071 (507 males and 564 females) on the asylum register. The public auditor has disallowed the expenditure which had been incurred during the year on days when lunatics had been released from the asylum. This was considered strange, as the cost on such days is generally greater than on ordinary ones and the auditor's predecessor had allowed it. It was decided to write to the Chief Secretary on the matter. A motion to place on record appreciation of the valuable services rendered to the institution by the resident medical staff (based upon Sir G. P. O'Farrell's complimentary report) was lost by the casting vote of the chairman. All spoke highly of the work of the medical staff but some could not vote for such a motion simply on the ground that it was unusual and unprecedented.

Prevention of Tuberculosis.

In connexion with the proceedings preliminary to the erection of a sanatorium in the county of Cork credit is due to the Midleton district council as the one which initiated the movement and organised the formation of a united district. 20 districts comprising the entire county united without a dissentient. This pioneer example is likely to be followed by others in Ireland.

March 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Asylums for those Temporarily Indigent.

To put an end to the overcrowding of the hospitals by chronic patients Dr. Babinski has set on foot a scheme for the construction of institutions which will occupy an intermediate position between a hospital and a casual ward and to which those temporarily ill ("*demi-malades*") may be admitted when they like, on presentation of an admission card which will be given to them after they have undergone a rigorous medical examination. If any crisis arises in their condition they will be cared for by the hospitals physicians but they will not be admitted, save only exceptionally, to the hospitals. After or between their attacks they will find shelter for the night and will be provided with food enough to remove all danger of starvation although not enough to make them anxious to remain permanently in the asylum or to take away their wish to find work. This seems an admirable plan. Those who are really infirm, the "*demi-malades*," and those who can only work intermittently will no longer find themselves confronted with the dilemma of either going into hospital where they cannot look for work or else of starving outside the hospital and the Assistance Publique will no longer waste vast sums of money for nothing. The public knowing that under this scheme any one really infirm will be helped will no longer let itself be exploited as is the case at present and will no longer provide the funds to perpetuate the evil of helping people indiscriminately. Finally, it goes without saying that the sham poor and the malingerers will be rapidly put an end to. Some such institution as that just described is all the more necessary in view of the fact that the Prefect of Police has just made some modifications in the casual ward (*dépôt de mendicité*) at Nanterre. Instead of this institution being confined exclusively as heretofore to vagabonds found on the highway who are taken in and placed under a kind of penal *régime*, the asylum will in future receive those temporarily out of work and homeless who can go in and out freely. The proceeds of their work (when they get any) will go to defray the expenses of the institution.

Appointments.

Dr. Albert Calmette has recently been elected by 40 votes out of 47 a corresponding member of the Academy of Sciences. He is well known as the director of the Pasteur Institute at Lille. He commenced professional life as a medical officer in the colonial service and distinguished himself by carrying out a number of scientific researches which have had practical applications. Another appointment, and one which has attracted more attention in Paris,

was that of M. Debove, dean of the Faculty of Medicine, to be president of the Comité Consultatif d'Hygiène de France in succession to M. Brouardel who has been president for the last 20 years and has now been appointed honorary president.

Hygiene and the Police.

The Prefect of Police of the Seine has recently created two new appointments—namely, those of inspector-general and assistant inspector-general of sanitary work undertaken in connexion with the prefecture of police. The inspector-general will have control of the outdoor service of the Bureau d'Hygiène, principally in reference to the prevention and limitation of epidemics, and the first holder of the new appointment is Dr. Thoinot, professeur agrégé in the Faculty of Medicine and inspecteur des épidémies; the assistant inspector-general is Dr. Bordas of the College of France and médecin inspecteur adjoint des épidémies.

The Sleeping Woman of Thénelles.

At the meeting of the Academy of Medicine held on March 8th M. Lancereaux read a paper the facts of which had been communicated by Dr. Charlier of Origny Sainte Benoite upon the celebrated sleeping woman of Thénelles. Her history is well known. She was the child of an alcoholic father and of a neurotic mother, being herself also highly neurotic. When she was 22 years old she had a child who died. At this time the gendarmes paid a domiciliary visit at her house under a warrant which really referred to her sister who had also lately been confined. This so alarmed her that she immediately fell into a lethargy which lasted for 20 years, during which she remained insensible to all outside impressions and was only kept alive by rectal injections. Finally, she became affected with tuberculosis and early one morning she awoke, recovered her senses, and recognised people, though she had no knowledge of what had passed. At the end of a few days she died. There is nothing very remarkable about this case except the length of time during which the sleep lasted. It is an obvious case of hysteria and M. Raymond, who succeeded to the charge of Charcot's wards at the Salpêtrière, informed the Academy that every year he saw on an average at least a dozen similar cases which were brought in from the streets by the police. In his opinion there is no difficulty in waking up such patients. Their limbs should be forcibly moved and the various methods of mechanotherapy should be employed so as gradually to excite their psychical centres which are benumbed. They should, however, be isolated, for the less a hysterical woman sees that she is an object of interest the more quickly she gets well.

March 15th.

Obituary.

JOHN REUBEN BATHURST DOVE, M.B., B.S. LOND., L.R.C.P. LOND., M.R.C.S. ENG.

WE regret to have to record the death of Dr. John Reuben Bathurst Dove, which took place at Northwood, Middlesex, on Jan. 27th at the age of 67 years. Born at Thornbury, Gloucestershire, in 1837, Dr. Dove began his career at the London Hospital in 1860 and soon proved his ability by the distinctions which he won. His contemporaries included George McKenzie, Louis Little, Jeremiah McCarthy, and James Adams of the "London" and Marcus Beck of University College Hospital. With the last named he tied for the gold medal in the examination for the B.S. He received the gold medal in surgery at the hospital and obtained first-class honours in medicine, midwifery, and surgery and honours in forensic medicine in the examination for his degree of M.B., B.S. at the University of London in 1867. He had previously taken the diploma of M.R.C.S. Eng. and the L.S.A. in 1864. Among the various resident hospital appointments which he held was that of extra resident medical officer with charge of the cholera wards in the severe epidemic in 1866. In 1868 he settled at Pinner in Middlesex and there he practised for upwards of 34 years. He became medical officer and public vaccinator for the Pinner district of the Hendon Union, and he held the same position for the Eastcote and Ruislip district of the Uxbridge Union, which posts he filled for over 30 years. For 30 years he was medical officer to the Commercial Travellers' Schools and he was also honorary surgeon to the West Herts Infirmary at Hemel Hempstead. For many years he worked an extensive practice with the help of an assistant, but a few years ago he took into partnership Mr. G. D. B. Levick, with whom he worked until 1902, when failing health obliged him to retire. The wear and tear of a busy practice without sufficient holidays had brought on a hemiplegic attack, the paralysis never fully passing off. On his retirement Dr. Dove was the recipient of a testimonial from the inhabitants of Pinner, given by them as a mark of esteem and a token of the regard in which his work in the neighbourhood was held. He then removed to Northwood but he did not live long to enjoy his well-earned repose, for signs of cardiac weakness appeared and this eventually caused his death. He has left a widow, two daughters, and a son who is in the medical profession. At the funeral, which took place at Pinner, an immense concourse of Dr. Dove's old friends and patients attended to show their respect to his memory and the whole district united in testifying to the loss which it had sustained by his death. Dr. Dove left behind him a record of long, honourable, and faithful service in Pinner and its neighbourhood. As a physician those of his own profession had the highest respect for his knowledge and attainments. Content to take up the life of a country practitioner, in the opinion of his medical friends he undoubtedly possessed abilities which if he had been of a less retiring disposition would have given him a good position among the consulting members of the profession. He had especially those rare qualities of careful observation and discrimination, joined with good judgment, which mark out the man of ability. In medical cases he was a keen diagnostician and he took the greatest interest in his surgical work at the Hemel Hempstead Infirmary, where he had opportunities of performing some of the major operations which do not fall, as a rule, to the lot of the general practitioner. Outside his professional work he had few hobbies but one of these, his garden, was an unfailing source of pleasure to him. Personally he had a quiet, sympathetic manner which endeared him to his patients and a dry sense of humour which had a great charm for those who knew him well. He was a good talker and nothing gave him greater pleasure than to chat with a brother medical man over interesting cases. He possessed the love and esteem of all with whom he was brought into intimate contact, for it was impossible to know him without recognising his whole-hearted devotion to his work, his love of justice and truth, and his high sense of duty. In short, he was a Christian and a gentleman in the real sense of the words and an example of the best type of general practitioner.

ANTONIO DE MARTINO.

THE Italian Senate—just reinforced by two distinguished physiologists, Professor Mosso of Turin and Professor Luciani of Rome—has lost another medical light in Dr. Antonio De Martino who died at Naples on Feb. 29th. Destined originally for the ecclesiastical career, young de Martino left his birthplace, Palma Campania (Caserta), for the Neapolitan University. There, having attended the literary and philosophical classes just long enough to acquire the scholarship that stood him in good stead in after life, he gave himself heart and soul to the medical studies of which he had felt the fascination and in which he was ere long to display his proficiency. Proceeding to the *summi in medicinâ honores*, he found a congenial post in the chair of pathology in the University, which he soon made specially attractive by the soundness of his doctrine and by the freshness and force of his style, written or spoken. These were the days of the Bourbon *régime*, stigmatised by Mr. Gladstone as "the negation of God on earth," and, like all the more generous-minded of young Italians, De Martino was a fervent if unobtrusive promoter of the Revolution. All his best pupils knew and sympathised with his ideal and the following anecdote, still popular among graduates who date from the "sixties," will illustrate the conditions under which in that epoch-making time medical study was prosecuted in Italy. It was the professor's custom to clear his throat before lecturing and, in concert with that sonorous process,

to unfold an ample silk handkerchief likened by the more facetious of his young audience to a mainsail. One morning at the close of September, 1860, by which time Garibaldi had made himself master of the two Sicilies, De Martino had just risen from his chair and the class was in momentary expectation of the opening signal—the unfolding of the silk handkerchief—when instead of this he produced and slowly unfolded a tricolor flag in miniature. The effect was magical, *concurrit dextera laevae*, and it was some time before the repeated rounds of cheering allowed him to proceed.

From pathology De Martino passed to clinical practice, having made ob-tetrics his specialty. In this department he rapidly attained distinction and became physician accoucheur to the House of Savoy, enjoying the friendship as well as the confidence of the Duchess of Genoa and Queen Margherita. He was in attendance at the birth of the present King of Italy and was in frequent consultation with the Queen-mother during the delicate infancy of the royal prince. But his constant occupation at Court in no way lessened his active interest in scientific and clinical work, his contributions to which procured for him every mark of professional confidence and esteem. Decorated with the gold medal for his heroic services in the terrible explosion of cholera in Naples during the autumn of 1884 he succeeded the illustrious Tommasi as President of the Neapolitan Medico Chirurgical Society and became a member of the Medical Academy of Turin and of the Accademia Pontaniana, vice-president of the Royal Acadamy of Natural Sciences, director of the Royal Veterinary E-tablishment of Naples, and corresponding fellow of many associations, medical and scientific, on the continent. He sat for a brief interval in Parliament, as a supporter of the policy of Cavour, and in June, 1881, was elevated to the Upper Chamber. One of his recreations was the study of medical history, on the vicissitudes of which he wrote many a scholarly and well-inspired monograph. In later years he had retired from active work of every kind, though, as the "old man eloquent," he was much courted by rising colleagues of the younger generation. He was 84 years of age when he died and his funeral at Naples on March 1st was attended by all the heads of the profession and the leading citizens—conspicuous on the bier being a lovely wreath of flowers sent by the Dowager Queen Margherita.

JOHN STOTHERT BARTRUM, F.R.C.S. ENG.

BY the death of Mr. J. S. Bartrum the city of Bath loses one of its oldest citizens and one most prominent in its municipal affairs. Both his father and his mother (who was a Miss Stothert) came of families well known in Bath, so that when he began practice some short time after Queen Victoria ascended the throne he came not as one unknown, albeit as untried. In London he had studied at King's College where he was a fellow student with the late Sir William Bowman, and afterwards he held an appointment as a resident at Middlesex Hospital. He became M.R.C.S. Eng. in 1838 and F.R.C.S. in 1847. He was a good representative of the all-round general practitioner and his patients belonged to all classes of the community. He was medical officer to the Eastern Dispensary and was also a surgeon to the Mineral Water Hospital, a nominal appointment which did not involve any surgery. He began practice at 41, Gay-street, where most of his active years were spent, removing to 13, Gay-street, in 1876, whence he retired in 1882. A Conservative in politics, a zealous churchman, and a generous supporter of medical charities, Mr. Bartrum was in civic matters prominent as a J.P., an alderman, and twice mayor of his native city. The blameless character of his life stood the test of 87 years. In the British Medical Association he was well known during the "fifties" and "sixties" and he served the Bath and Bristol branch as honorary secretary with loyal patience and punctuality at a time when it was essential for the success of the Association that its honorary secretaries should work ardently not only for the good of their immediate neighbourhood but also for the general interests of the society. Although not endowed with great literary ability he had a remarkable capacity for business and he worked hard for the British Medical Association. His time and trouble were ungrudgingly bestowed and his efforts were gratefully recognised at the annual meetings.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The degree of Doctor of Science, *honoris causâ*, is to be conferred on Dr. Wilhelm Ostwald, professor of chemi try in the University of Leipsic.—At a congregation on March 10th the following medical degrees were conferred:—

M.B. and B.C.—R. M. Ranking, Pembroke.
M.B. only.—H. Ackroyd, Caius; and J. H. Donnell, Caius.
B.C. only.—T. H. E. Watts-Silvester, Caius.

UNIVERSITY OF OXFORD: BOARD OF FACULTY OF MEDICINE.—Dr. J. F. Payne and Dr. G. I. Schorstein, whose term of office on the Board of Faculty had terminated, have been again co-opted members of the Board.

LITERARY INTELLIGENCE.—"A Complete Handbook for Midwives," designed to meet the requirements of the Central Midwives Board, has been written by Dr J. K. Watson and will shortly be published by the Scientific Press, Limited.

PRESENTATION TO A MEDICAL PRACTITIONER.—On March 3rd Mr. Ernest R. Evans, M.R.C.S. Eng. was presented with a gold watch and a silver rose bowl on his retirement from the post of honorary medical officer to the Hertford General Infirmary after nearly 20 years' service. The chairman (Mr. Abel H. Smith, M.P.), in presenting him with the testimonial from the governors and friends of the infirmary, spoke of the valuable and kindly services that he had rendered to the institution for so many years.

BRISTOL GENERAL HOSPITAL.—The half-yearly meeting of the governors of this institution was held on March 14th under the presidency of the Lord Mayor. The annual report for 1903 which was presented stated that the ordinary expenditure for the year was £12,768, the ordinary receipts were £11,427, and an unfavourable balance of £1341 remained. The total adverse balance of the hospital is now £3825. The medical report showed that during the year 2094 in-patients were admitted, being 196 less than in 1902. The daily average number of in-patients was 164·2. The out-patients numbered 31,994, an increase of 1845 compared with the previous year. At the hospital at the new docks at Avonmouth, which is worked by the staff of the Bristol General Hospital, 87 in-patients were admitted and 2343 out-patients were treated. The committee in the report makes a strong appeal for funds to reduce the debt of the institution.

PROPOSED NATIONAL TRAINING SCHOOL FOR DISTRICT MIDWIVES.—Under the auspices of the Lady Mayoress a meeting was held at the Mansion House on March 14th, with the Countess of Stamford in the chair, on behalf of a proposed national training school for district midwives. The Bishop of London described what was done in other countries in educating and supervising midwives. In France midwives had to attend lectures and to study in a hospital and in Belgium and in Holland the Government also supervised the education and practice of midwives. In Austria the education of midwives was free but the training was only for five months. In Germany midwives who could pay for their education did so but to those who could not education was given free. In Russia there was a special school kept up by the Government at St. Petersburg for the education of midwives. Sweden and Norway were among the first to introduce a law to regulate the education of midwives and their practice, and the regulations of Sweden and Norway were, in the opinion of those most competent to judge, the best for all practical purposes. This country had undertaken a great responsibility in passing the Midwives Act and a hospital must be provided with a well-equipped school for the efficient training of midwives. The training should last for 18 months and a grant should be received by the institution from the State in aid of the work. In the few words that Miss Annie McCall addressed to the meeting in favour of founding a national school for the training of midwives in this country she described the efforts made by Miss Alice Gregory towards this object. The scheme advocated by Miss Gregory was to secure some hospital where suitable women would be able to be trained for district midwifery. The training would be undertaken by the

midwives with a full understanding that they would work at district midwifery for a certain number of years. Miss Gregory then explained in detail her scheme and observed that the National Training School for District Midwives would be commenced first of all by training a few midwives. Dr. C. J. Cullingworth thoroughly endorsed the views expressed and concluded his speech by thanking the Countess of Stamford for occupying the chair.

GENERAL HOSPITAL, BIRMINGHAM.—The 124th report of this institution states that during the year 1903 the number of in-patients treated was 5366, a decrease of 276 as compared with the previous year, but the daily average of patients in the hospital was 289½, as against 288½ in 1903. Of the in-patients admitted 1128 were children under 12 years of age, of whom 206 were under two years. The out-patients were 64,926, or 2407 more than in the previous year. The number of operations performed was 2137. The amount accruing from subscriptions and extra tickets was £8002, only £152 more than in the previous year. The donations were £402, as compared with £436, and special congregational collections £57, as against £67. £6715 were placed to the credit of the current account as the moiety of legacies received during the year, as compared with £675 in the year 1902. The ordinary expenditure was £24,841 19*s.* 1*d.* and the extraordinary £117 0*s.* 1*d.*, while the sum of £332 1*s.* 7*d.* was transferred to the Jaffray branch account to meet the deficit at that institution, making a total of £25 298 16*s.* 1*d.* The adverse balance, £11,423 16*s.* 9*d.*, brought forward from the year 1902 has been reduced to £7302 18*s.* 0*d.* The board urgently appeals for new and increased subscriptions, for donations, and for bequests, so that the work of the hospital may be continued for the benefit of the sick and suffering in the Midlands.

THE REMOVAL OF KING'S COLLEGE HOSPITAL.—A meeting was held at the Mansion House on March 11th in furtherance of the appeal for funds to enable King's College Hospital to be removed to South London. The Lord Mayor presided and among those present were the Archbishop of Canterbury, the Bishop of Rochester, the Rev. A. C. Headlam, D.D. (Principal of King's College), Dr. David Ferrier, and Mr. W. Watson Cheyne. The Lord Mayor said that owing to the recent great changes in the character of the neighbourhood, coupled with the proximity of Charing Cross Hospital, there was no longer the same necessity as formerly for a large hospital in that locality. Great numbers of people who used to live in Drury lane and other streets adjoining the Strand had now gone elsewhere and on the whole there was little doubt but that the hospital would be more useful in Camberwell than on its present site. In Camberwell there was a considerable population of very poor persons to whom facilities for obtaining advice at a hospital would be a great blessing. Mr. W. F. D. Smith, M.P., said that the removal of the hospital had become imperative on account of the fact that the existing buildings in some respects fell short of modern requirements and extension of them was impossible. Moreover, the formation of a wide thoroughfare from Holborn to the Strand had necessitated the demolition of a great many houses and one result of these improvements would be the reduction of the population of the district by not less than 4000 persons. There were, in fact, at the present moment too many hospitals concentrated in Central London, while, on the other hand, South London was in great need of a general hospital. A sum of £300,000 would be required for the completion of the first portion of the buildings on the new site. It was intended to have a limited competition for plans for a hospital of 600 beds and Mr. Rowland Plumbe, F.R.I.B.A., had consented to act as assessor in the competition. The scheme had the approval of the authorities of the King's Hospital Fund, who had given a substantial donation. The Archbishop of Canterbury, at the conclusion of a sympathetic address, moved "that this meeting cordially approves of the scheme to remove King's College Hospital to South London and pledges itself to do its utmost to insure the success of the movement." Dr. Ferrier said that, as representing the medical staff of the hospital, he desired to refer briefly to a few special aspects of the case. It was only in great hospitals which were also educational institutions that medical practitioners could obtain practical training in the diagnosis and treatment of disease, and King's College Hospital, which had for many years ministered to the sick of a large poverty-stricken district, had also sent out thousands of qualified men to practise their profession in every part of the globe; many important additions to medical knowledge had also been made there. The medical and surgical staff were now unanimously of opinion that removal of the hospital to a more populous district such as Camberwell was advisable in the interests both of the poor and of the medical school. The motion, which was seconded by Mr. C. E. Tritton, M.P., and was also supported by the Bishop of Rochester and Mr. Watson Cheyne, was carried unanimously.

MEDICAL COUNTY COUNCILLORS.—Dr. George A. Cohen has been elected a county councillor on the Middlesex County Council for the Harringay division of Middlesex, and Mr. Horace Rose has been elected to the Bucks County Council for the Eastern division of Aylesbury.

DONATIONS AND BEQUESTS.—The Goldsmiths' Company has made a special grant of £750 to the Royal London Ophthalmic Hospital in response to the committee's centenary appeal.—By the will of Mr. Joseph Jackson of Rosebank, Scotforth, Lancashire, £300 are bequeathed to the Royal Lancaster Infirmary.—Mr. H. W. H. Faulenbach of Enfield, Middlesex, has by his will bequeathed £500 to the German Hospital, Dalston.

SOCIETY OF ARTS.—At a meeting of the Society of Arts, held on March 2nd, Dr. Robert Jones of the London County Asylum at Claybury in Essex read a paper on the Physical and Mental Deterioration of the Lower Classes of the British Population. Many of our readers will be aware that Dr. Jones maintains that this deterioration is on the increase. A copious exposition of his opinions appeared in THE LANCET of August 8th, 1903, p. 366. In the ensuing discussion, however, most of the speakers took a more favourable view of the circumstances. Sir William S. Church, who presided, said that it was universally admitted that public health was better at the end of the nineteenth century than at its beginning and if this belief were proved to be unfounded then the alleged progress and prosperity of the Victorian era must be a myth. Dr. Harry Campbell said that the subnormal physique of urban populations was due principally to the use of soft food which required little or no mastication. Dr. Campbell's views were published at length in several issues of THE LANCET in July and August, 1903. Dr. William Hall held that the evils complained of arose through mothers not suckling their infants. Sir Ralph Knox of the War Office, speaking of the arguments drawn from the recruiting returns, said that there had always been a large proportion of rejections and that a recruit after his first rejection often renewed his application elsewhere, so that his rejection appeared more than once in the returns.

THE PRUDENTIAL ASSURANCE COMPANY.—The directors of this assurance company have recently presented their fifty-fourth annual report which shows that the company is still making headway. The report shows in detail the separate finances of the ordinary branch and the industrial branch. The last-named branch includes all those millions of people who pay 1*d.* or a few pence per week which are collected by the army of agents of this company. The accounts for the year ending Dec. 31st, 1903, contain an item in this respect of £1,588,768 paid as salaries to 15,593 agents for the weekly collection of premiums from 14,287,406 policies in the industrial branch, and it is also interesting to note that in the same branch the medical fees paid are stated to be £55 875 1*s* 9*d* For the purposes of readily grasping the magnitude of the business we have added the figures for the two branches together and they show that for the year ending Dec. 31st, 1903, the premiums received amounted to £9,661,410, that the claims made amounted to £3,624,510, that the number of deaths was 217,450, that the policies in force at the end of the year numbered 15,912,487, that the total assets of the company on Dec. 31st, 1903, were valued at £51,217,377, and that the liability to shareholders was only £1,000,000. In this connexion it is interesting to note from the Insurance Blue Book and Guide for 1903–04 that the dividend on the shares, which are of £5 each, for the last financial year was 5 per cent. and that a bonus of 44*s.* per share was paid in 1902 and that the recent average price of the share was £65. It may be interesting to note that the assets of the company are chiefly invested in loans on county council, municipal and other rates, railway, gas, and water stocks, and mortgages on property within the United Kingdom.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 9TH.

National and Research Scholarships.

Mr. B. GRAY asked the Secretary to the Board of Education to explain why the Board had recently reduced the value of the national and research scholarships from 30*s.* to 25*s.* per week and whether having regard to the desirability of keeping these scholarships open to students unable to supplement them by private means he would advise the Board to reconsider its decision.—Sir W. ANSON replied: The change to which reference is made formed part of a readjustment of the amounts paid as allowances to students in the Royal College of Science and was decided upon not recently but in 1901. The allowances then were—to Royal exhibitioners £50 a session of about 40 weeks; to national scholars 30*s.* a week; and to students in training 21*s.* a week. The Board was of opinion that it was desirable to equalise these rates and decided that for national scholarships and studentships in training alike the rate should be 25*s.* a week. The new rates were duly announced in 1901 but did not take effect until 1902 and then only in the case of new scholars. The students to whom these awards are made receive also railway fares for one journey to and fro each session between their homes and London and are admitted free to lectures and laboratories of the Royal College of Science. There is no separate class of research scholarships but exhibitions or scholarships vacated by the resignation of the holders are awarded for the residue of the time during which they run to former students who desire to prosecute research in the college. These awards are necessarily of the same amounts as the original scholarships. The Board has never intended that these scholarships should be of an eleemosynary character. It believes that the amount of the scholarships is sufficient to attract good candidates and that in the majority of cases it provides an adequate supplement to the other resources of the students and it considers that in any cases where more is needed the assistance should be provided under the supervision of the local authorities rather than from funds administered by the Board. The students who gain these scholarships have, as a rule, been for a period of years under the direct observation of the local school authorities who thus necessarily possess, or can readily obtain, a more intimate knowledge of the circumstances of each student than can the Board. The scholarships provided by local authorities offer in many places the further assistance required. In these circumstances I do not consider it desirable that the decision of the Board be reconsidered.

Indian Medical Service.

Sir SEYMOUR KING asked the Secretary of State for India whether he would state what arrangements, if any, had been made for post-commission study by seconded officers of the Indian Medical Service; and in what respects the arrangements in force or proposed were similar to, or different from, those of the Royal Army Medical Corps and the medical officers of the Royal Navy.—Mr. BRODRICK replied as follows: An officer of the Indian Medical Service may be granted one month's study leave for each year's service up to 12 months in all. During such leave the ordinary furlough pay will be given, with lodging allowances of 4*s.*, 6*s.*, and 8*s.* a day for lieutenants, captains, and field officers respectively. In the Royal Army Medical Corps the arrangements for post-commission study are somewhat different. All junior officers are posted to the Royal Army Medical College for six months. While there they draw their ordinary pay. The examination at the end of the course is combined with the examination for promotion to the rank of major. Medical officers of the Royal Navy are required to undergo a post-graduate course of three months once in every eight years. They receive full pay, lodging allowance at the rate of £50 or £70 a year according to rank, and provision allowance at the rate of £24 a year. In addition to the extra furlough for study granted to Indian Medical Service officers they may be seconded before proceeding to India for the purpose of holding appointments in recognised civil hospitals. During such periods they receive no pay from India revenues.

THURSDAY, MARCH 10TH.

Committee on Physical Degeneration.

Sir JOHN GORST asked the Secretary to the Board of Education whether he would state what were the terms of reference to the departmental committee now sitting on physical degeneration.—Sir W. ANSON replied as follows: The original reference charged the committee with a preliminary inquiry into the allegations concerning the deterioration of certain classes of the population as shown by the large percentage of rejections for physical causes of recruits for the army and by other evidence, especially the report of the Commission on Physical Instruction in Scotland, and to consider in what manner the medical profession can best be consulted on the subject with a view to the appointment of a Royal Commission and the terms of reference to such a Commission, if appointed, but this reference was subsequently explained to imply the duty (1) to determine, with the aid of such counsel as the medical profession are able to give, the steps that should be taken to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people; (2) to indicate generally the causes of such physical deterioration as does exist in certain classes; and (3) to point out the means by which it can be most effectually diminished.

Tuberculosis Commission.

Mr. FIELD asked the President of the Local Government Board whether he would state if it was the intention of the Tuberculosis Commission to issue an interim report and if so how soon it might be expected.—Mr. LONG answered: I understand that the Commission does not intend to issue an interim report.

Plague in India.

Mr. WEIR asked the Secretary of State for India to state the number of persons who died from plague in Central India and Rajputana respectively during January, 1903, and January, 1904.—Mr. BRODRICK replied: The numbers are: Central India, January, 1903, 92; and January, 1904, 3721. Rajputana, January, 1903, 10; and January, 1904, 716.

Mr. WEIR also asked what percentage of persons inoculated with serum in India subsequently died from plague.—Mr. BRODRICK replied: Calculated on the figures of inoculations and death in the several provinces given by my predecessor in office in reply to a question asked by the honourable Member on June 11th, 1903, the percentage of deaths is 0·24. I have no later information on the subject but the Government of India has lately taken steps to secure a more accurate record for the future.

Amendment of the Pharmacy Act.

Mr. O'MALLEY asked the First Lord of the Treasury whether he would consider the advisability of adopting for Great Britain a measure similar to the ordinance lately promulgated for the Orange River Colony, which prohibits a firm, co-partnership, or company carrying on the business of a pharmaceutical chemist in the dispensing of medicines or the compounding of poisons unless the directors are qualified persons.—Mr. BALFOUR, in reply, said: The subject is under consideration in connexion with a Bill for the amendment of the Pharmacy Act which is in preparation.

Bovine Tuberculosis.

On the London County Council (General Powers) Bill Sir H. STRACHEY moved an instruction to the committee to insert provisions to safeguard the interests of the owners of cows suspected to be suffering from tuberculosis of the udder. Among other things it was proposed that before slaughter the milk of the suspected animal should be submitted to the medical officer of health for bacteriological examination, that in the event of slaughter a veterinary surgeon should be present, and that if he should certify that the cow had not been suffering from tuberculosis the Council should pay special damages.—Sir HERBERT MAXWELL, the chairman of the Royal Commission on Tuberculosis of 1895, explained that there was a great difference between generalised tuberculosis and localised tuberculosis, and he suggested that the mover of the motion did not realise that tuberculosis of the udder was one of the rarest forms of the disease. It was not until the disease had become generalised that it appeared in the udder and it could then easily be recognised by anyone skilled in veterinary science. Therefore there was no question of suspecting a cow of having tuberculosis of the udder. He went on to point out that it was rash to assume from Professor Koch's change of front that there was no danger of infection from the interchange of the tuberculous disease between bovine animals and man. That question was *sub judice* and they should not anticipate the verdict by declaring that there was no risk of infection. But his point was that as the disease was easily recognised in the udder there was small risk of the slaughter of a cow on mistaken grounds.—Sir WALTER FOSTER attached much weight to this statement and contended that everything pointed to the desirability of a thorough examination of the Bill in committee. The late Sir Richard Thorne had collected evidence which went to show that while tuberculosis had lessened in this country in other directions it had increased among young children and that was largely due to the sale of contaminated milk. One of the easiest methods of contamination would be by using the milk of cows with tuberculous udders. Evidence was gradually growing to show that in this matter of the communication of bovine tuberculosis to man Professor Koch was mistaken but while the matter remained *sub judice* that ought not to be used as an argument for refusing a thorough investigation to this Bill. After further debate the motion was defeated by 195 to 59.

FRIDAY, MARCH 11TH.

The Adulteration of Brandy.

Mr. T. M. HEALY asked the Chancellor of the Exchequer whether his attention had been called to the decision of the Justiciary Appeal Court of Scotland upholding a conviction of the Sheriffs' Court of Hamilton against a refreshment contractor who sold as brandy a mixture into which patent spirit was blended, and whether, seeing that such a practice had been held to be contrary to the Sale of Food and Drugs Acts, the Government would cancel the regulations which forbid officers of Excise or Customs from interfering to prevent like frauds as to whisky being carried on in bonded warehouses and allow official protests to take place.—The CHANCELLOR OF THE EXCHEQUER replied: My attention had not been called to this case till the honourable and learned Member's question appeared upon the paper. I am making inquiries into the facts and shall be obliged if the honourable Member will defer his question till these inquiries are completed.

MONDAY, MARCH 14TH.

Outbreak of Disease at Finchley.

Dr. FARQUHARSON asked the President of the Local Government Board whether his attention had been called to the report of the medical officer of health of Finchley on a recent outbreak of disease due to milk similar to that which occurred in Woking last autumn and whether he intended to introduce legislation this session with a view to prevent such occurrences in the future.—Mr. LONG answered as follows: I have seen the report referred to in the question. I have taken note of the suggestion for legislation but I cannot promise to make proposals on the subject during the present session.

Frozen Meat and Cancer.

Mr. ALFRED DAVIES asked the President of the Local Government Board whether he had any official information showing that the stoppage of decomposition in frozen and chilled meat during transit from abroad to the United Kingdom had any injurious effect upon those eating such food, and especially whether it contributed to the increasing number of cases of cancer, and, if not, whether he would direct inquiry to be made in the matter.—Mr. LONG replied: I have no information to the effect suggested by the honourable Member. Whether the eating of frozen meat has any influence in producing cases of cancer is a question to which the attention of the Cancer Research Committee now sitting might, I think, be properly drawn. I have had the matter under my attention and will consider what steps should be taken with regard to it.

Vaccination Statistics.

Answering Mr. WEIR, Mr. LONG said: According to the information

I have obtained the total number of vaccinations and revaccinations performed by public vaccinators in the four years ended at Lady Day, 1899, was 1,370,897 and the average amount of the fee per case was 2s. 2d. In the four years ended Lady Day, 1903, the total number of vaccinations and revaccinations performed by public vaccinators had risen to 3,197,192 and the average amount of the fee per case was rather less than 2s 10d. The substitution of the system of domiciliary vaccination under the Vaccination Act, 1898, for vaccination at fixed stations and the requirement that the operation shall be performed with antiseptic dressings have greatly increased the demand upon the time of the public vaccinators and higher fees have consequently to be paid. A departmental committee is, however, at present inquiring into the subject of vaccination fees.

TUESDAY, MARCH 15TH.

A Professorship of Biology.

Mr. HERBERT ROBERTS asked the Secretary of State for India whether he was aware that on the professorship of biology at the Madras Presidency College becoming vacant Mr. K. R. Menon, assistant professor of biology, was appointed to act in the place of Dr. Bourne a specialist in zoology, and had filled the position for two years, and whether, seeing that the Madras Government now proposed to supersede Mr. Menon by a specialist in botany from England, he would take steps to secure that Mr. Menon's qualifications and claims to the appointment should be considered.—Mr. BRODRICK replied: I will take care that Mr. Menon's claims to the post are fully considered but I cannot promise that he will be appointed to it.

Dispensary Fees.

Mr. JORDAN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the action of the Local Government Board in refusing to sanction payment of half fees of medical practitioners acting as locum tenents in the Holywell dispensary district of the Enniskillen union, county Fermanagh, during the enforced absence of Mr. J. W. Tate, the medical officer of the district, because of a serious accident; what were the grounds on which the refusal was based; and whether, in view of the amount of the sum and the poverty of the division, he would instruct the Local Government Board to sanction the payment of the amount in question.—Mr WYNDHAM replied: There is no statutory provision enabling the Board to allow recoupment to the local authority in respect of this service and the Board is unable, therefore, to sanction payment.

Miners' Phthisis Commission.

Mr. HALDANE asked the Colonial Secretary whether any steps had been taken to carry out the recommendations of the Miners' Phthisis Commission appointed for the Transvaal in 1902.—Mr. LYTTELTON answered as follows: Lord Milner informs me that a great deal has been, and is being, done to improve the sanitary conditions of the mines generally and to minimise specific danger in the dusty parts of the mines. The question whether any, and if so what, preventive measures could be legislatively enforced is still under consideration. Medical opinion is not agreed as to specific preventives such as respirators, of which no completely satisfactory type has yet been discovered. The Chamber of Mines has offered a prize for invention of the best means of preventing dust in mines and it is hoped that competition may throw further light on the subject. The medical officer of health reports that the number of deaths from miners' phthisis among the whole population of Witwatersrand, both white and coloured, was eight last month.

The Care of Imbeciles.

Mr. CHARLES HOBHOUSE asked the First Lord of the Treasury whether, in view of the petition presented to His Majesty's Government by various persons and authorities interested in the case of imbeciles and defective or feeble-minded persons, a Royal Commission should be appointed to consider the provisions now made for these classes; and whether he was now in a position to reply to the further letter presented to him in July, 1903, in support of the petition by Members of Parliament on both sides of the House.—Mr BALFOUR replied: I understand that this question has for some time past been engaging the attention of both the Home Office and the Local Government Board. These departments have not yet decided upon the best form of inquiry to meet the particular problems referred to and it may be necessary to extend the scope of the reference. A decision will be reached, I hope, at an early date, which will be communicated to the honourable Member if he will put down another question in a week's time.

Allowances to Medical Witnesses.

Mr. RUTHERFOORD HARRIS asked the Secretary of State for the Home Department whether he was aware that although the allowances to medical witnesses in criminal cases in courts throughout England and Wales had in accordance with the recommendations of the departmental committee which reported on the subject last year (as stated in the memorandum prefixed to the new scale and dated Nov. 12th, 1903) been considerably increased there was no such increase in the fees allowed to medical witnesses in the metropolitan police-courts; and if so, whether, seeing that under the statutory rules and orders establishing the new scale all the previous rules and regulations made under Section 5 of the Criminal Justice Administration Act, 1851, had been revoked, he would explain why the regulations made for the metropolitan police courts on July 31st, 1875, remained in force.—Mr AKERS-DOUGLAS replied: I think the question is based on a misapprehension. The old regulations under the Criminal Justice Administration Act, 1851, have been revoked and the new regulations which increase the fees allowed to medical witnesses have been fully brought into force in the metropolitan police-courts. There is no difference between their application in the metropolitan police-courts and their application in other courts. The Act of 1851, however, does not provide for the payment of fees to witnesses in all cases, but only where the prosecution is for certain definet offences, including all felonies and the more serious misdemeanours. In the case of minor misdemeanours the law makes no provision for the payment of witnesses. In these minor cases for which the law does not provide it has been the practice for many years in the metropolitan police-courts to pay certain fees to medical witnesses from police funds. These fees are not affected by the new regulations under the Act of 1851 and continue to be regulated by a different scale from that governing the statutory fees.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ARMOUR, DONALD, M.B., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Surgeon in charge of the Nose, Throat, and Ear Department, Belgrave Hospital for Children.

BERRY, FREDERICK CHARLES, M.D., B.Ch. Dub., has been re-appointed Medical Officer of Health of Burnham (Somerset).

BULLMORE, C. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S.Glasg., has been appointed Certifying Surgeon under the Factory Act for the Falmouth District of the county of Devon.

CLAPHAM, LUCY B., M.B. Lond., has been re-appointed Assistant Anæsthetist, New Hospital for Women, Euston-road.

EDGELOW, SAMUEL HENRY, M.R.C.S., has been appointed Public Vaccinator, Streaky Bay, South Australia.

FLEMMING, PERCY, B.S. Lond., F.R.C.S. Eng., has been appointed Professor of Ophthalmic Medicine and Surgery in University College, London, and Surgeon to the Ophthalmic Department of University College Hospital.

GARDNER, HARRY, M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon to the Croydon General Hospital.

GOODMAN, T. HERBERT, M.R.C.S. Eng., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Haverhill District of the Risbridge Union.

GRUNBAUM, OTTO, M.B., B.C. Cantab., D.Sc. Lond., has been appointed Assistant Physician to the Belgrave Hospital for Children.

HAWES, IVON, M.B., B.S. Durh., has been appointed Junior House Surgeon to the Royal Infirmary, Bristol.

JOHNS, H. D., M.D. Durh., has been appointed Certifying Surgeon under the Factory Act for the Hornsea District of the county of York.

KERSWILL, JOHN BEDFORD, M.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health for the St. Germans (Cornwall) Rural District Council.

KING, D. BARTY, M.D., M.R.C.P. Edin., has been appointed Honorary Physician to Queen Alexandra's Home for Officers' Widows and Daughters.

LAWSON, F. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Steyning District of the county of Sussex.

LOVE, ROBERT J., L.R.C.P. & S. Edin., L.F.P.S.Glasg., has been appointed Additional District Surgeon of Wodehouse (Cape Colony), Medical Officer to Indwe Land, Railway, and Collieries Co., Limited, and Medical Officer to Indwe-Maclear Railway Construction (Cape Government Railway).

MACDOUGALL, WM., M.A. Aberd., M.B., Ch.B. Edin., has been appointed Principal Medical Officer to the Christmas Island Phosphate Company and Government Medical Officer of Christmas Island (Indian Ocean).

MILNER, CYRIL WILLIAM, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Consulting Surgeon to the Nottingham General Dispensary.

MOLONEY, P. J., L.R.C.P. & L.R.C.S.I., has been appointed Acting District Medical Officer and Public Vaccinator at Menzies, West Australia.

PARKER, CHAS., M.B., Ch.M. Edin., has been re-appointed to the Honorary Medical Staff of the Launceston Hospital, Tasmania.

PEARSE, E. M., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Royal Infirmary, Bristol.

PHILLIPS, P. C., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Grantham Hospital, Lincolnshire.

SCOTT, W. H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Casualty Officer, Royal Infirmary, Bristol.

SHIPMAN, G. A. C., M.B., B.C. Cantab., has been appointed Honorary Surgeon to the Grantham Hospital, Lincolnshire.

SMITH, W. C. B., M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon to the Croydon General Hospital.

STEPHEN J. H., M.B., B.S. Vict., has been appointed Certifying Surgeon under the Factory Act for the Banff District of the county of Banff.

STUMBLES, HENRY MARTYN, M.B., Ch.B. Edin., has been appointed Police Surgeon to the Amble District, Northumberland County Constabulary.

WEBB, W. T., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Obstetric Officer to the Royal Infirmary, Bristol.

WILLMOT, ROBERT, M.R.C.S., F.R.C.S. Edin., L.S.A., has been appointed Official Visitor of the Hospital for Insane, New Norfolk, Tasmania.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELFAST, QUEEN'S COLLEGE.—Riddel Demonstrator in Pathology and Bacteriology. Salary £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House Surgeons (resident). Salaries £100 and £80 per annum and fees.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £100, with board and lodging.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £120 per annum, with rooms and attendance.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon, also Assistant House Surgeon. Salary of House Surgeon £100 per annum, of Assistant House Surgeon £70 per annum, both with apartments, board, and laundry.

ESSEX AND COLCHESTER HOSPITAL.—Honorary Assistant Surgeon.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Assistant House Surgeon. Salary £70, with board, residence, and washing. Also Eight Clinical Assistants.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn-circus, E.C.—Honorary Physician.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £75, with apartments and board.

GRAVESEND HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

HANLEY, STOKE, AND FENTON INFECTIOUS DISEASES HOSPITAL.—Lady Resident Medical Officer. Salary £100, with board, residence, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, with board and lodging.

LEEDS UNION WORKHOUSE, SCHOOLS, AND INFIRMARY, Beckett-street.—Assistant Medical Officer, unmarried. Salary £130 per annum, rising to £150, with board, washing, apartments, &c.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon for six months, eligible for re-election. Honorarium of £25, with board, residence, and washing.

LONDON HOSPITAL, Whitechapel, E.—Ophthalmic Surgeon.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Assistant Physician.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-road, S.E.—Resident Medical Officer.

ST. BARTHOLOMEW'S HOSPITAL. Physician.

ST. MARYLEBONE GENERAL DISPENSARY, 17, Welbeck-street, Cavendish-square.—Honorary Physician.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), Greenwich, S.E.—Junior Resident Medical Officer. Salary £40 per annum, with board residence, and washing.

SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, residence, and washing.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford. Assistant Medical Officer, unmarried. Salary £160 per annum, increasing to £200, with apartments, board, &c.

TOTTENHAM HOSPITAL, London, N.—Honorary Anæsthetist.

UNIVERSITY COLLEGE, London.—Assistant Surgeon to the Ophthalmic Department.

WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory Act at Bruton, in the county of Somerset.

Births, Marriages, and Deaths.

BIRTHS.

BEATH.—On March 9th, at Dunsford-place, Bath, the wife of David Leslie Beath, M.R.C.S., L.R.C.P., of a son.

FISHER.—On March 8th, at Stantway Court, Westbury-on Severn, the wife of Reginald W. Fisher, M.R.C.S., L.R.C.P., of a daughter.

FRANCIS.—On March 12th, at Homeleigh, Uxbridge, the wife of L. A. Francis, M.R.C.S. L.R.C.P., of a daughter.

GERVIS.—On March 13th, at Steele's-road, Hampstead, N.W., the wife of Arthur Frederick Gervis, Surgeon, of a daughter

HOWARD-JONES.—On March 12th, at the North Friary Nursing Home, Plymouth, the wife of J. Howard Jones, M.R.C.S. Eng., L.R.C.P. Lond., of Polyphant, Launceston, of a son.

HUBERT.—On the 5th March, at Bromsgrove, Billingshurst, Sussex, the wife of W. A. Hubert, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

MARRIAGES.

BRADSHAW—GLYNN.—Thomas Robert Bradshaw, M.D., to Rose Mary, eldest daughter of Thomas Robinson Glynn, M.D., of Liverpool.

WARDALE—ROBINSON.—On March 9th, 1904, at Christ Church, Gateshead, by the Rev. F. C. McDonald, M.A., John Dobson Wardale, M.B., B.S., youngest son of John Dobson Wardale, Esq., J.P., M.Inst.C.E., Gateshead, to Anne Georgina Robinson, eldest daughter of J. W. Robinson, Esq., of Gateshead and Haydon Bridge.

DEATHS.

ECCLES.—On March 11th, at Holywood-terrace, Plymouth, Alfred Eccles, F.R.C.S. Eng., in his 83rd year.

KENNEDY.—On March 17th, Hester Delina, the dearly beloved wife of Alfred E. Kennedy, of Chesterton House, Plaistow, E.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

INQUEST UPON A "CHRISTIAN SCIENTIST."

AT an inquest held at Chelsea upon the body of a gardener named William Wright on March 9th, the medical evidence, based upon post-mortem examination, was to the effect that the cause of death was double pneumonia occurring in conjunction with chronic disease of the kidneys. The deceased had apparently lost his situation in Yorkshire because, ill as he was, he had refused to go to an infirmary; he had declined to have medical advice in London and was stated to have been "studying Christian Science" with a view to thus curing himself. A witness named Miller, a butler by occupation, gave evidence that he had seen Wright on his arrival in London and explained, in answer to the coroner's questions, the part which he had taken in the matter. He apparently regarded himself as intrusted with the task of assisting the unfortunate man to get well by means of prayer and he expounded his views to the coroner as to the non-existence of disease and as to the value of "Christian Science" in cases of illness and physical injury. The coroner's curiosity as to the names and addresses of persons who had had fractured bones successfully united by the aid of "Christian Science" he was unable to satisfy, but he was confident of the existence of such cases. The coroner, after hearing the medical evidence, told the jury that if a man chose not to have medical advice he alone was to blame for his own death and a verdict in accordance with the medical evidence closed the proceedings. Morally, though not legally, the blame for the death of William Wright should rest on the shoulders of others whose education and intelligence place upon them a heavier responsibility than that of his friend the butler.

TO MEDICAL FREEMASONS.

To the Editors of THE LANCET.

SIRS,—May I through the medium of your widely read columns appeal to medical men, and more especially to medical Freemasons, who are subscribers to the different Masonic charitable institutions, for their votes and influence on behalf of the candidates whose names are given below and who are up for the next elections in April and May? Their respective claims for election are all genuine ones and any votes on their behalf will be thankfully received by myself or our treasurer, Dr. J. Eyre, Wandle House, Wandle-road, Upper Tooting, S.W.

Royal Masonic Benevolent Institution for Aged Freemasons and the Widows of Freemasons (election in May).—Mrs. Georgina Skinner, widow of the late W. Bro. David Skinner, M.D., late medical officer of health for Willesden (P.M. 665, 1974; P.Z. 890).

Royal Masonic Institution for Girls (election on April 7th).—Irene Mabel Sewart, daughter of the late Mr. John Hunter Sewart of Lostwithiel.

Royal Masonic Institution for Boys (election on April 8th).—Patrick Trevor Webster, son of the late Mr. Trevor Webster of Bewdley, Worcestershire.—I am, Sirs, yours faithfully,

HAROLD S. SINGTON,
Honorary Secretary, St. Luke's Medical Lodge of Instruction.
44, St. Mary's-mansions, W., March 12th, 1904.

To the Editors of THE LANCET.

SIRS,—Will you kindly permit me to remind my brothers in medicine who are also "brothers of the mystic tie" that at the forthcoming elections at the Royal Masonic Institution for Girls and the Royal Masonic Institution for Boys there will be in each case one, and only one, medical candidate. The girl's name is Irene Mabel Sewart, daughter of the late Mr. John Hunter Sewart, M.R.C.S. Eng., L.R.C.P. Edin., No. 34 on the list. The boy is Patrick Trevor Webster, son of the late Mr. Trevor Webster, M.R.C.S. Eng., L.S.A., No. 14 on the list.

In these days of medical and hospital lodges the above-named candidates should not fail to be elected.—I am, Sirs, yours faithfully,

March 10th, 1904. B. L. R. A. T.

CRIMINAL CONVICTION AND THE MEDICAL REGISTER.

JAIL-BIRD writes: "Do the Royal College of Surgeons of England and the Royal College of Physicians of London grant their diplomas to men that have been in jail for stealing?" We take it that by this question we are to assume that the imprisonment to which "Jail-bird" alludes took place before the completion of the curriculum. A medical man convicted of felony is removed *ipso facto* from the Medical Register when his diplomas are taken away from him by the Colleges, but with regard to sins committed before qualification for the Register we can understand that a certain amount of latitude would be allowed to the authorities of the corporations. A medical student desiring to obtain the qualifications of the Conjoint Board has to conform to a curriculum, averaging nearly six years in duration, during which time he has to attend a recognised medical school. Not many convicted thieves are ever in a position to do this. If a lad while very young were led away by temptation and suffered accordingly, and if in the face of this fact those responsible for a medical school chose to help in his redemption, and if during his five or six years

in statu pupillari his conduct gave them no cause to revoke their leniency, we cannot think that the Colleges would be right to refuse their diplomas to him. No one is more anxious than we are to keep the ranks of the medical profession from the first day of registration as a medical student purged from all wrong-doers, but we cannot subscribe to the suggestion that a wrong-doer always remains a wrong-doer. The situation to which our correspondent "Jail-bird" has drawn attention can hardly ever occur, but if and when it does we do not believe that the profession as a whole would suffer by the adoption of the merciful view.

UNPLEASANTLY ENERGETIC.

WE have received from Port Adelaide, South Australia, the following card which leaves in our mind the impression that the medical man whose name we have suppressed, while energetic, has no very great opinion of the restrictions that usually regulate the conduct of members of the medical profession:—

Telephone No. ——. CONSULTATION HOURS: *10.30 a.m. to 1.30 p.m.*

X——,
St. Vincent Street,
Right hand side of Railway Line, Main Street.

When required to visit Ship kindly Telephone by 9 A.M. if possible.

When sending a member of crew for advice please send order with him.

We are informed that these cards have been distributed to the various shipping offices of Port Adelaide and we have no hesitation in saying that, if such organised touting for business took place in this country, the medical man in question would be considered to have transgressed the laws of the profession against advertising. It has been alleged in these columns more than once that the rules of the General Medical Council, no less than the unwritten laws of the medical profession, have not and cannot have the same force in the colonies as they possess in the mother country. We appreciate that in some places different circumstances may excuse a laxer procedure, but we cannot imagine any excuse for the systematic attempt on the part of a medical man, through the distribution of business cards, to grab any private practice that the ships may bring into the port where he resides. And if X—— does not mean to do that by circulating his cards what is the object of his enterprise?

CARRIER PIGEONS.

IN an article on the breeding and training of the homing, or carrier pigeon the *Scientific American* of March 5th states that arrangements are being already made for a 500-mile pigeon race from Spartanburg in North Carolina to Philadelphia, to be held on July 4th. The greatest "record" for flight is 1603 yards in a minute. Two other passages from the article are as follows: "Clubs devoted to raising and improving the carriers are scattered in every state in the Union and their memberships are all large; but there are tens of thousands of individual breeders who do not belong to any association. Thousands of these breeders enter their home-raised pigeons in the races and sometimes win prizes which the professionals fail to capture. ..... Country physicians have in many instances adopted them as messengers. A physician raises a loft of carriers for the pleasure of it and when he visits a patient four or five miles away he carries with him a basket containing one of his birds. If dangerous symptoms arise in the night or the following day the pigeon is released with a message. Some physicians with long country routes carry half a dozen or more of these pigeons on their rounds and leave one at each place. A daily report of the different cases can thus be obtained by pigeon service at no cost to physician or patient."

THE CHARMING AWAY OF WARTS.

To the Editors of THE LANCET.

SIRS,—The following may afford amusement if not instruction to the readers of THE LANCET. A few days ago a charming young lady friend stopped me and begged me to come to her mother's house and charm away a batch of warts which disfigured the hands of one of their maids. I had the greatest difficulty to convince her that I possessed no such power and she was unmistakeably dissatisfied. Her faith in me as a wart charmer arose in this way. About 12 years ago, when this same young lady was a child of 14 years of age, she and her mother when driving beckoned to me from their carriage. They were on the look out for me for my opinion was wanted as to what should be done to a large number of warts on the hands of the child. There were over 20, about 12 or more on one hand, as far as I can remember, and about eight or more on the other. The child was at a sensitive age and keenly felt the disfigurement, for they were all on the back of the hands and they were ugly warts. They were so numerous and so large that I reluctantly declined to treat them. Quite in joke, however, but in order to make up for the evident disappointment, I said that I would charm them away. I took the child's hands in mine, rubbed them gently, and assured her, but with much earnestness, that in a short time they would all disappear. Within a fortnight they were gone and my surprise was as great as the child's delight.

I have always looked upon this as a mere coincidence and have no reason now to consider it in any other light. All authorities, however, agree that warts have some direct relation to the nervous system. They have been known to disappear under mental emotion and many old women have claimed the power of dispersing them. In the above case my earnestness no doubt made a solid impression on the child's mind. Could this have anything to do with their disappearance? I should be glad to know if any of your readers have had similar experience.

I am, Sirs, yours faithfully,
Windermere, March 13th, 1904. ARCHD. HAMILTON, M.D. Edin.

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—For the benefit of those of your readers desiring to invest in automobiles and who are not fully acquainted with the numerous pitfalls as to make, finish, price, workmanship, durability, and newness or otherwise of engines fitted I recommend to them the services of Mr. G. Wilding, 100, Denbigh-street, who being independent of any vendor firm advises reliably on the above points for a moderate fee and with whose past services I have reason to be satisfied.

I am, Sirs, yours faithfully,
F. W. FORBES ROSS, M.D. Edin., F.R.C.S. Eng., &c.
Gower-street, W.C., March 14th, 1904.

RED NOSE.

M. E. writes: "Can any reader kindly advise writer as to the best treatment for red nose? My patient is a lady, aged 35. The nose is generally cold and there are frequently pustules forming on the alæ. The condition appears to be largely vaso-motor, the nose at times being less unsightly than at others. The only other affection is a profuse menstruation once a fortnight."

Ubique.—1. The only justification B could have for taking the case from A's hands was knowledge that A was treating it unscientifically. As a matter of fact, from the statement made to us, A was treating the case perfectl correctly. 2. In accordance with this view A would be right, if he wished to do so, to abstain from professional relations with B, but we think that to do this would be unwise. Such a course weakens the medical profession as a whole and prolongs bad feeling. 3. We think that A is legally right to keep the half fee which has been paid to him as a retainer and probably the court would take this view. Would it not, however, be more dignified to return the money?

R. R.—(1) If the facts were proved to be as stated by our correspondent a county-court judge would, we think, be bound to hold that A employed the medical man to attend his servant and that having done so he was liable to pay him; (2) the fees named are, in our opinion, reasonable in the circumstances; (3) the county court, unless any local legal practitioner can supply any reason to the contrary, is the better court; (4) if the medical man recovers judgment the defendant will presumably be ordered to pay costs. The amount of the costs recoverable depends upon the amount of the judgment and upon what the judge may allow.

Os calcis.—There are several suitable books on the subject published in all the principal languages but Herman's "Diseases of Women" (Cassell and Co., price 25s.) is the book which we recommend in the Students' Number of THE LANCET and it would probably suit our correspondent's purpose.

R. P. is thanked for the prospectus. It has been issued broadcast to the medical profession. We doubt whether the medical man does reside at Sandgate and we consider his action in the matter open to serious professional question.

R. B. asks leave to hazard the suggestion that a writer in the columns of THE LANCET is a hypochondriacal patient endeavouring to obtain a free opinion. R. B. has evidently small appreciation of our acumen.

J. M.—There is no suitable book and it seems to us that to write one would be a very difficult task. Boys should be warned by their male relatives.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 17th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 9.30 A.M.
Mar. 11	30·35	N.E.	...	82	49	35	36	37	Cloudy
,, 12	30·25	S.E.	...	62	47	34	36	36	Foggy
,, 13	30·01	S.	...	72	48	31	38	42	Cloudy
,, 14	29·67	S.W.	...	69	49	32	39	40	Foggy
,, 15	29·95	N.E.	0·01	81	47	36	36	37	Cloudy
,, 16	30·07	SSW	...	82	49	37	37	40	Hazy
,, 17	29·88	N.E.	...	76	47	34	35	37	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9 30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9 30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9 30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9 30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. J. W. T. Walker: The Surgical Anatomy of the Normal and Enlarged Prostate and the Operation of Suprapubic Prostatectomy.—Dr. W. A. Turner: The Mental Condition in Epilepsy in Relation to Prognosis.

WEDNESDAY (23rd).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8 P.M. Council Meeting. 8.30 P.M. Dr. P. Franze (Nauheim): Description of the Nauheim Treatment. Followed by a discussion.

THURSDAY (24th).—CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Lecture:—Dr. H. R. Jones: Child Punishments.

FRIDAY (25th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. E. W. Goodall: Two Cases of Intestinal Obstruction immediately following an Attack of Typhoid Fever.—Mr. W. G. Spencer: A Case of Severe and Fatal Hæmaturia of Unknown Origin.—Mr. C. S. Wallace and Mr. H. J. Marriage: A Case of Attempted Division of the Eighth Nerve within the Skull for the Relief of Tinnitus.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. E. M. Corner: Acute Infective Gangrenous Processes (Necroses) in the Alimentary Tract. (Erasmus Wilson Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Edwards: Stricture of the Urethra.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Clinique. (Skin.) 5.15 P.M. Dr. L. Guthrie: On Neurotic Children.

TUESDAY (22nd).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. F. Taylor: Some Disorders of the Spleen. (Lumleian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. Jones: The Relationship of Insanity to Inebriety.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Rankin: Clinique. (Medical.) 5.15 P.M. Dr. L. Williams: Spa Treatment and some of its Indications.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Collier: Chorea.

WEDNESDAY (23rd). ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. E. M. Corner: Acute Infective Gangrenous Processes (Necroses) in the Alimentary Tract. (Erasmus Wilson Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robinson: Common Disorders of Menstruation.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. B. W. Roughton: Clinique. (Surgical.) 5.15 P.M. Dr. L. Guthrie: On Neurotic Children.

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—4 P.M. Lecture:—Diseases of the Stomach. (Post-Graduate Course.)

THURSDAY (24th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. F. Taylor: Some Disorders of the Spleen. (Lumleian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Shuter: Administration of Anæsthetics.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. J. M. H. Macleod: Some General Principles of Treatment in Dermatology.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.). 6.15 P.M. Dr. M. Dockrell: Epithelioma. (Chesterfield Lecture.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Still: The Use and Abuse of Artificial Foods in Infant Feeding.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. G. P. Chappel: Ulcerative Endocarditis.

FRIDAY (25th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. E. M. Corner: Acute Infective Gangrenous Processes (Necroses) in the Alimentary Tract. (Erasmus Wilson Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. Jones: Clinical Forms of Insanity.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Gunn: Clinique. (Eye).

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Prof. Dewar: Liquid Hydrogen Calorimetry.

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